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DEPARTMENT OF AGRICULTURE

REPORT OF THE STATISTICIAN.

New Series.

Report No. 91.

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REPORT

ON THE

CROPS OF THE YEAR,

AND ON

FREIGHT RATES OF TRANSPORTATION COMPANIES.

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DECEMBER, 1891.

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PUBLISHED BY THE AUTHORITY OF THE SECRETARY OF AGRICULTURE.

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WASHINGTON:  
GOVERNMENT PRINTING OFFICE.  
1892.







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## DECEMBER REPORT.

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DEPARTMENT OF AGRICULTURE,  
*December 31, 1891.*

SIR: I herewith respectfully submit for publication a report of the results of the December returns, showing the prices of farm products and the area and condition of the fall sowing of wheat and rye. A summary of the history of certain crops of the year is given, with the area, product, and aggregate value of the crops of corn, wheat, and oats.

A variety of miscellaneous matter is also presented, including chapters on the agricultural resources of Uruguay and the Guianas, special articles on the packing industry and imported cotton, and the results of a special investigation into the distribution of spring and winter wheat.

The report of the London agent, Mr. Moffatt, is also presented. The current changes of the season in rates of transportation by land and water are given as usual.

Respectfully,

J. R. DODGE,  
*Statistician.*

Hon. J. M. RUSK,  
*Secretary.*

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## CROPS OF THE YEAR.

### METEOROLOGY.

An examination of the meteorological records covering the growing season of 1891 shows that in the main the weather of that portion of the year was characterized by a marked deficiency in temperature, and an equally prominent deficiency in rainfall. These general characteristics were especially prominent in the meteorological districts which comprise the principal agricultural sections of the country. April opened the crop year with a record which showed usually but little



variance from the normal of that month for a series of years, the principal departure being in the matter of temperature in the lake regions, the Mississippi and Missouri valleys and the extreme Northwest, where the range was from 2° to nearly 6° above the average. Rainfall, where there was any appreciable variation, was rather under than over the usual record.

A knowledge of the temperature and rainfall prevailing during the growing season is absolutely essential to a full understanding of crop results, and in order that a study of the record in detail may be made the following statement showing temperature and rainfall by months during the planting, growing, and harvesting season in all sections of the country is presented. The figures are from the official records of the Weather Bureau and give the normal record of the month as computed from the observations of a series of years in comparison with the results of observations for the present year.

TEMPERATURE.

| Districts.                             | April.             |       | May.               |       | June.              |       | July.              |       | August.            |       | September.         |       |
|----------------------------------------|--------------------|-------|--------------------|-------|--------------------|-------|--------------------|-------|--------------------|-------|--------------------|-------|
|                                        | For several years. | 1891. | For several years. | 1891. | For several years. | 1891. | For several years. | 1891. | For several years. | 1891. | For several years. | 1891. |
|                                        | °                  | °     | °                  | °     | °                  | °     | °                  | °     | °                  | °     | °                  | °     |
| New England.....                       | 43.6               | 45.6  | 53.7               | 52.9  | 62.8               | 62.5  | 68.8               | 65.6  | 66.8               | 68.3  | 60.7               | 64.8  |
| Middle Atlantic States ..              | 51.6               | 54.2  | 62.4               | 60.7  | 70.9               | 71.1  | 76.2               | 71.9  | 73.5               | 74.4  | 67.9               | 70.8  |
| South Atlantic States ...              | 61.4               | 62.5  | 70.3               | 67.6  | 76.6               | 77.6  | 80.5               | 77.3  | 78.7               | 79.5  | 74.2               | 74.7  |
| Florida peninsula .....                |                    |       |                    |       |                    |       |                    |       |                    |       |                    |       |
| Eastern Gulf States .....              | 66.5               | 65.8  | 73.0               | 71.3  | 78.9               | 80.4  | 81.6               | 79.2  | 79.8               | 79.6  | 75.9               | 76.1  |
| Western Gulf States ....               | 66.9               | 66.0  | 73.3               | 70.6  | 79.5               | 80.0  | 82.9               | 80.4  | 81.1               | 79.3  | 75.5               | 76.0  |
| Rio Grande Valley.....                 | 75.2               | 72.4  | 79.5               | 77.4  | 83.3               | 85.3  | 85.3               | 85.7  | 84.9               | 83.7  | 80.8               | 80.2  |
| Ohio Valley and Tennes-<br>see .....   | 56.1               | 58.2  | 65.5               | 62.7  | 73.3               | 75.9  | 77.7               | 73.1  | 74.6               | 73.8  | 68.7               | 71.3  |
| Lower Lake region .....                | 44.2               | 47.2  | 56.3               | 53.9  | 65.9               | 67.1  | 71.9               | 67.0  | 68.4               | 69.2  | 62.4               | 67.0  |
| Upper Lake region .....                | 40.1               | 42.5  | 51.4               | 50.4  | 61.2               | 61.9  | 68.2               | 63.4  | 65.1               | 65.5  | 58.5               | 64.3  |
| Extreme Northwest .....                | 41.5               | 47.3  | 54.1               | 54.2  | 65.2               | 61.0  | 68.4               | 63.4  | 65.2               | 64.4  | 54.9               | 60.2  |
| Upper Mississippi Valley               | 51.3               | 53.3  | 61.5               | 59.9  | 70.4               | 71.2  | 75.8               | 70.0  | 72.1               | 70.8  | 64.4               | 69.8  |
| Missouri Valley .....                  | 51.1               | 53.1  | 60.6               | 58.6  | 69.9               | 67.8  | 75.5               | 70.2  | 71.1               | 70.5  | 62.8               | 68.0  |
| Northern slope .....                   | 45.7               | 47.7  | 54.2               | 54.8  | 64.2               | 60.3  | 70.5               | 66.9  | 68.1               | 67.3  | 57.6               | 60.0  |
| Middle slope.....                      | 51.5               | 52.7  | 60.6               | 59.4  | 70.6               | 67.4  | 75.8               | 72.0  | 72.8               | 72.5  | 65.2               | 67.7  |
| Southern slope.....                    | 63.0               | 61.8  | 70.8               | 67.4  | 77.8               | 77.3  | 82.5               | 80.5  |                    |       |                    |       |
| Southern plateau .....                 | 59.2               | 59.1  | 67.6               | 66.1  | 76.3               | 74.1  | 79.6               | 80.2  | 79.6               | 80.3  | 72.4               | 74.1  |
| Middle plateau .....                   | 48.9               | 47.5  | 57.2               | 57.2  | 65.7               | 61.5  | 72.4               | 71.5  | 71.4               | 71.3  | 61.8               | 62.5  |
| Northern plateau.....                  |                    |       |                    |       |                    |       |                    |       |                    |       |                    |       |
| North Pacific coast region             | 50.1               | 49.8  | 55.0               | 55.2  | 58.9               | 57.3  | 61.1               | 62.0  | 60.8               | 63.8  | 58.2               | 57.9  |
| Middle Pacific coast re-<br>gion ..... | 58.6               | 56.3  | 63.6               | 61.6  | 67.7               | 67.1  | 71.3               | 72.8  | 71.7               | 73.7  | 68.3               | 68.2  |
| South Pacific coast region             | 59.6               | 58.8  | 61.9               | 61.2  | 66.5               | 65.0  | 69.9               | 71.4  | 71.2               | 73.6  | 68.8               | 71.6  |



## PRECIPITATION.

| Districts.                          | April.     |            | May.       |            | June.      |            | July.      |            | August.    |            | September. |            |
|-------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                     | Normal.    | 1891.      | Normal.    | 1891.      | Normal.    | 1891.      | Normal.    | 1891.      | Normal.    | 1891.      | Normal.    | 1891.      |
|                                     | <i>In.</i> | <i>In.</i> | <i>In.</i> | <i>In.</i> | <i>In.</i> | <i>In.</i> | <i>In.</i> | <i>In.</i> | <i>In.</i> | <i>In.</i> | <i>In.</i> | <i>In.</i> |
| New England.....                    | 3.50       | 2.29       | 3.57       | 1.99       | 3.09       | 2.48       | 4.43       | 3.53       | 4.57       | 3.67       | 3.87       | 2.67       |
| Middle Atlantic States ..           | 3.44       | 2.33       | 3.60       | 3.26       | 3.83       | 2.68       | 4.58       | 6.78       | 4.85       | 4.85       | 4.02       | 2.52       |
| South Atlantic States....           | 3.88       | 1.71       | 3.84       | 3.65       | 5.16       | 3.02       | 6.28       | 6.88       | 6.58       | 8.08       | 5.71       | 4.31       |
| Florida peninsula.....              | 1.58       | 1.79       |            |            |            |            | 7.30       | 2.70       |            |            |            |            |
| Eastern Gulf States .....           | 5.00       | 1.70       | 4.42       | 1.72       | 5.61       | 4.97       | 5.42       | 5.32       | 5.67       | 2.07       | 4.51       | 2.11       |
| Western Gulf States.....            | 4.05       | 3.90       | 4.55       | 1.51       | 3.84       | 2.64       | 3.07       | 4.47       | 3.62       | 2.52       | 4.24       | 3.04       |
| Rio Grande Valley.....              | 1.37       | 2.88       | 1.28       | 2.22       | 2.69       | 0.99       | 1.71       | 1.61       | 3.54       | 1.24       | 5.85       | 5.25       |
| Ohio Valley and Tennessee.....      | 4.04       | 2.14       | 3.96       | 1.92       | 4.34       | 4.47       | 3.95       | 4.75       | 3.77       | 3.47       | 3.14       | 1.54       |
| Lower Lake region .....             | 2.37       | 1.81       | 3.27       | 1.45       | 3.75       | 2.52       | 3.26       | 3.06       | 3.03       | 2.43       | 3.07       | 1.57       |
| Upper Lake region .....             | 2.30       | 2.22       | 3.30       | 1.23       | 3.91       | 2.45       | 3.20       | 2.80       | 3.11       | 4.11       | 3.62       | 1.52       |
| Extreme Northwest .....             | 1.57       | 2.18       | 2.12       | 1.61       | 3.42       | 5.67       | 2.93       | 3.33       | 2.17       | 1.97       | 1.76       | 1.86       |
| Upper Mississippi Valley ..         | 2.85       | 2.51       | 4.16       | 2.26       | 4.93       | 4.10       | 3.75       | 2.95       | 3.23       | 4.03       | 3.58       | 1.08       |
| Missouri Valley .....               | 3.92       | 3.41       | 4.14       | 3.22       | 4.51       | 6.05       | 3.88       | 2.98       | 2.85       | 1.65       | 2.53       | 0.73       |
| Northern slope .....                | 1.42       | 1.60       | 2.35       | 2.91       | 2.41       | 3.76       | 2.18       | 2.88       | 1.89       | 2.09       | 1.14       | 1.14       |
| Middle slope .....                  | 2.25       | 2.18       | 3.32       | 3.50       | 3.00       | 4.29       | 2.58       | 2.98       | 2.93       | 1.63       | 1.51       | 2.81       |
| Southern slope .....                | 2.65       | 2.32       | 3.21       | 2.79       | 3.00       | 3.12       | 2.49       | 2.89       | 3.88       | 1.48       | 2.57       | 1.17       |
| Southern plateau .....              | 0.33       | 0.03       | 0.31       | 1.08       | 0.53       | 0.28       | 2.13       | 0.53       | 1.30       | 0.30       | 0.68       | 1.28       |
| Middle plateau .....                | 1.61       | 1.00       | 1.05       | 1.43       | 0.60       | 0.76       | 0.50       | 0.80       | 0.83       | 0.53       | 0.64       | 1.24       |
| Northern plateau .....              | 1.37       | 0.77       | 1.58       | 0.74       | 1.64       | 3.44       | 0.62       | 1.22       |            |            |            |            |
| Northern Pacific coast region ..... | 3.74       | 5.97       | 2.93       | 2.00       | 2.52       | 4.03       | 1.07       | 0.67       | 1.32       | 1.52       | 3.03       | 4.63       |
| Middle Pacific coast region ..      | 2.43       | 2.25       | 0.92       | 1.14       | 0.34       | 0.24       | 0.00       | 0.09       | 0.01       | 0.01       | 0.35       | 0.35       |
| South Pacific coast region ..       | 1.31       | 0.84       | 0.37       | 0.23       | 0.09       | 0.02       | 0.00       | T.         | 0.10       | 0.00       | 0.07       | 0.07       |

From the data above presented a showing of the aggregate rainfall during the six months under consideration in the principal agricultural districts is made up. This compilation shows that the season was remarkably dry in all sections except the extreme Northwest and the north Pacific coast region. The seasonal deficiency was most marked in the eastern Gulf States, where the precipitation was 12.74 inches less than the average, but little more than half of the normal quantity being received. There was also a considerable deficiency in other sections of the cotton belt, amounting to 3.80 inches in the south Atlantic States, and 5.29 inches in the western Gulf region. In the corn belt the deficiency was quite marked, ranging from 3.79 inches in the Missouri Valley to 5.91 inches in the lower Lake region.

The aggregate rainfall for the period under consideration in the principal districts, with the departure from the normal, for two seasons is presented.

## AGGREGATE RAINFALL.

| Districts.                      | 1891.          |                |                            | 1890.          |                |                            |
|---------------------------------|----------------|----------------|----------------------------|----------------|----------------|----------------------------|
|                                 | Normal.        | For the year.  | Departure from the normal. | Normal.        | For the year.  | Departure from the normal. |
|                                 | <i>Inches.</i> | <i>Inches.</i> | <i>Inches.</i>             | <i>Inches.</i> | <i>Inches.</i> | <i>Inches.</i>             |
| New England.....                | 23.03          | 16.63          | — 6.40                     | 21.49          | 22.44          | +0.95                      |
| Middle Atlantic States .....    | 24.32          | 22.42          | — 1.90                     | 23.39          | 25.75          | +2.36                      |
| South Atlantic States.....      | 31.45          | 27.65          | — 3.80                     | 31.53          | 32.22          | +0.69                      |
| Eastern Gulf States .....       | 30.63          | 17.89          | —12.74                     | 30.37          | 29.21          | —1.16                      |
| Western Gulf States.....        | 23.37          | 18.08          | — 5.29                     | 23.83          | 26.85          | +3.02                      |
| Ohio Valley and Tennessee ..... | 23.20          | 18.29          | — 4.91                     | 23.22          | 25.37          | +2.15                      |
| Lower Lake region .....         | 18.75          | 12.84          | — 5.91                     | 19.82          | 22.55          | +2.73                      |
| Upper Lake region .....         | 19.44          | 14.33          | — 5.11                     | 20.24          | 17.37          | —2.87                      |
| Extreme Northwest .....         | 13.97          | 16.62          | + 2.65                     | 14.35          | 13.96          | —0.39                      |
| Upper Mississippi Valley .....  | 22.50          | 16.93          | — 5.57                     | 23.05          | 18.88          | —4.17                      |
| Missouri Valley .....           | 21.83          | 18.04          | — 3.79                     | 21.18          | 15.33          | —5.85                      |
| North Pacific coast region..... | 14.61          | 18.82          | + 4.21                     | 14.77          | 10.07          | —4.70                      |



The monthly departures from the normal, both in temperature and rainfall, for each district are presented to facilitate a study of the detailed meteorology of the year in relation to agricultural production.

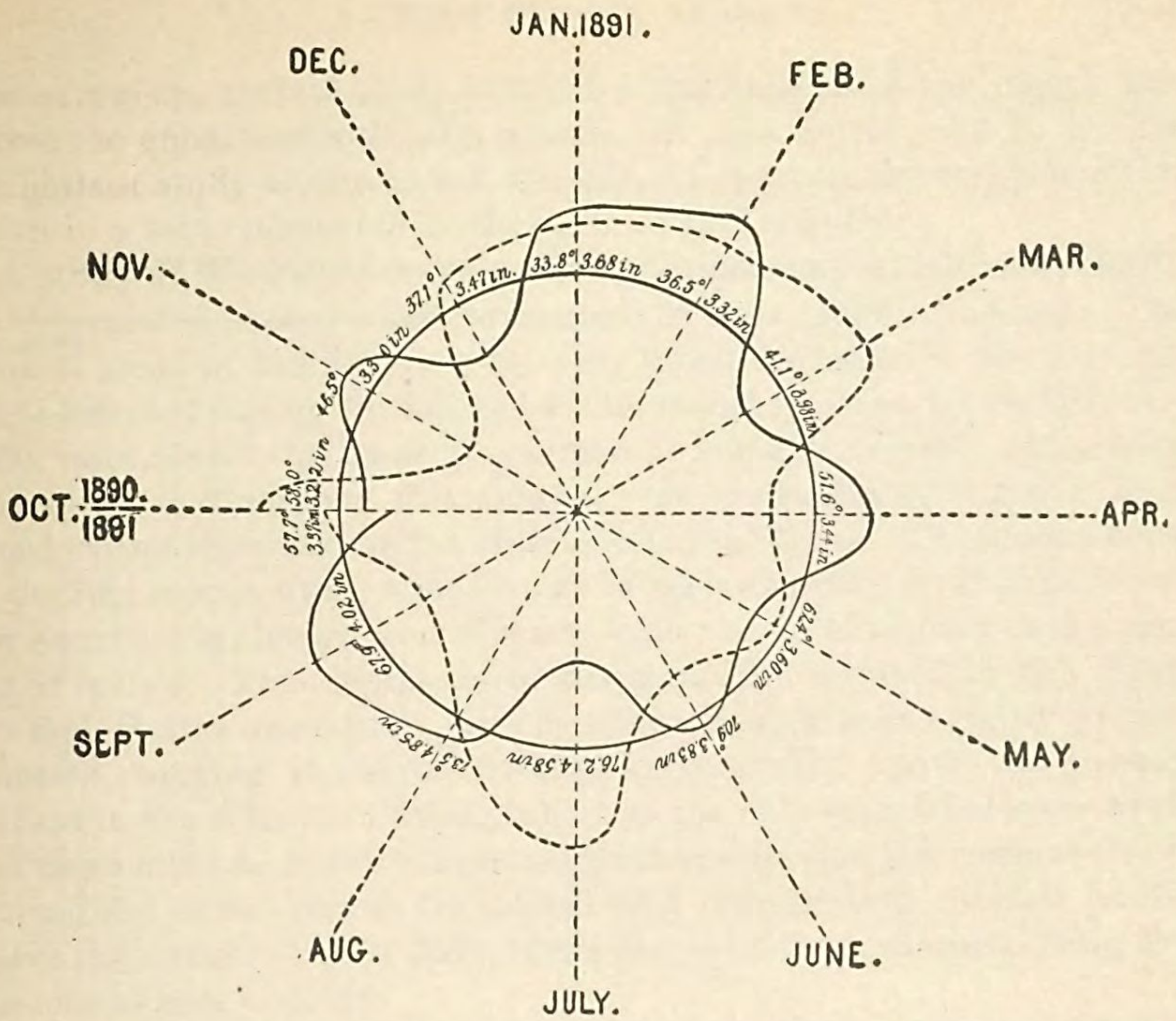
DEPARTURES OF TEMPERATURE AND RAINFALL FROM THE NORMAL.

| Districts.                        | April.       |           | May.         |           | June.        |           | July.        |           | August.      |           | September.   |           |
|-----------------------------------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|
|                                   | Temperature. | Rainfall. | Temperature. | Rainfall. | Temperature. | Rainfall. | Temperature. | Rainfall. | Temperature. | Rainfall. | Temperature. | Rainfall. |
|                                   | °            | Inch.     | °            | Inch.     | °            | Inch.     | °            | Inch.     | °            | Inch.     | °            | Inch.     |
| New England.....                  | +2.0         | -1.21     | -0.8         | -1.58     | -0.3         | -0.61     | -3.2         | -0.9      | +1.5         | -0.9      | +4.1         | -1.2      |
| Middle Atlantic States..          | +2.6         | -1.11     | -1.7         | -0.34     | +0.2         | -1.15     | -4.3         | +2.2      | +0.9         | 0.0       | +2.9         | -1.5      |
| South Atlantic States..           | +1.1         | -2.17     | -2.7         | -0.19     | +1.0         | -2.14     | -3.2         | +0.6      | +0.8         | +1.5      | +0.5         | -1.4      |
| Florida peninsula.....            |              | +0.21     |              |           |              |           |              | -4.6      |              |           |              |           |
| Eastern Gulf States.....          | -0.7         | -3.30     | -1.7         | -2.70     | +1.5         | -0.64     | -2.4         | -0.1      | -0.2         | -3.6      | +0.2         | -2.4      |
| Western Gulf States....           | -0.9         | -0.15     | -2.7         | -3.04     | +0.5         | -1.20     | -2.5         | +1.4      | -1.8         | -1.1      | +0.5         | -1.2      |
| Rio Grande Valley.....            | -2.8         | +1.51     | -2.1         | +0.94     | +2.0         | -1.70     | +0.4         | -0.1      | -1.2         | -2.3      | -0.6         | -0.6      |
| Ohio Valley and Tennessee .....   | +2.1         | -1.90     | -2.8         | -2.04     | +2.6         | +0.13     | -4.6         | +0.8      | -0.8         | -0.3      | +2.6         | -1.6      |
| Lower lake region .....           | +3.0         | -0.56     | -2.4         | -1.82     | +1.2         | -1.23     | -4.9         | -0.2      | +0.8         | -0.6      | +4.6         | -1.5      |
| Upper lake region.....            | +2.4         | -0.08     | -1.0         | -2.07     | +0.7         | -1.46     | -4.8         | -0.4      | +0.4         | +1.0      | +5.8         | -2.1      |
| Extreme northwest.....            | +5.8         | +0.61     | +0.1         | -0.51     | -4.2         | +2.25     | -5.0         | +0.4      | -0.8         | -0.2      | +5.3         | +0.1      |
| Upper Mississippi Valley.....     | +2.0         | -0.34     | -1.6         | -1.90     | +0.8         | -0.83     | -5.8         | -0.8      | -1.3         | +0.8      | +5.4         | -2.5      |
| Missouri Valley.....              | +2.0         | -0.51     | -2.0         | -0.92     | -2.1         | +1.54     | -5.3         | -0.9      | -0.6         | -1.2      | +5.2         | -1.8      |
| Northern slope.....               | +2.0         | +0.18     | +0.6         | +0.56     | -3.9         | +1.35     | -3.6         | +0.7      | -0.8         | +0.2      | +2.4         | 0.0       |
| Middle slope.....                 | +1.2         | -0.07     | -1.2         | +0.18     | -3.2         | +1.29     | -3.8         | +0.4      | -0.3         | -1.3      | +2.5         | +1.3      |
| Southern slope.....               | -1.2         | -0.33     | -3.4         | -0.42     | -0.5         | +0.12     | -2.0         | +0.4      |              | -2.4      |              | -1.4      |
| Southern plateau .....            | -0.1         | -0.30     | -1.5         | +0.77     | -2.2         | -0.25     | +0.6         | -1.6      | +0.7         | -1.0      | +1.7         | +0.6      |
| Middle plateau .....              | -1.4         | -0.61     | 0.0          | +0.38     | -4.2         | +0.16     | -0.9         | +0.3      | -0.1         | -0.3      | +0.7         | +0.6      |
| Northern plateau.....             |              | -0.60     |              | -0.84     |              | +1.80     |              | +0.6      |              |           |              |           |
| North Pacific coast region .....  | -0.3         | +2.23     | +0.2         | -0.93     | -1.6         | +1.51     | +0.9         | -0.4      | +3.0         | +0.2      | -0.3         | +1.6      |
| Middle Pacific coast region ..... | -2.3         | -0.18     | -2.0         | +0.22     | -0.6         | -0.10     | +1.5         | +0.1      | +2.0         | 0.0       | -0.1         | 0.0       |
| South Pacific coast region .....  | -0.8         | -0.47     | -0.7         | -0.14     | -1.5         | -0.07     | +1.5         | 0.0       | +2.4         | -0.1      | +2.8         | 0.0       |

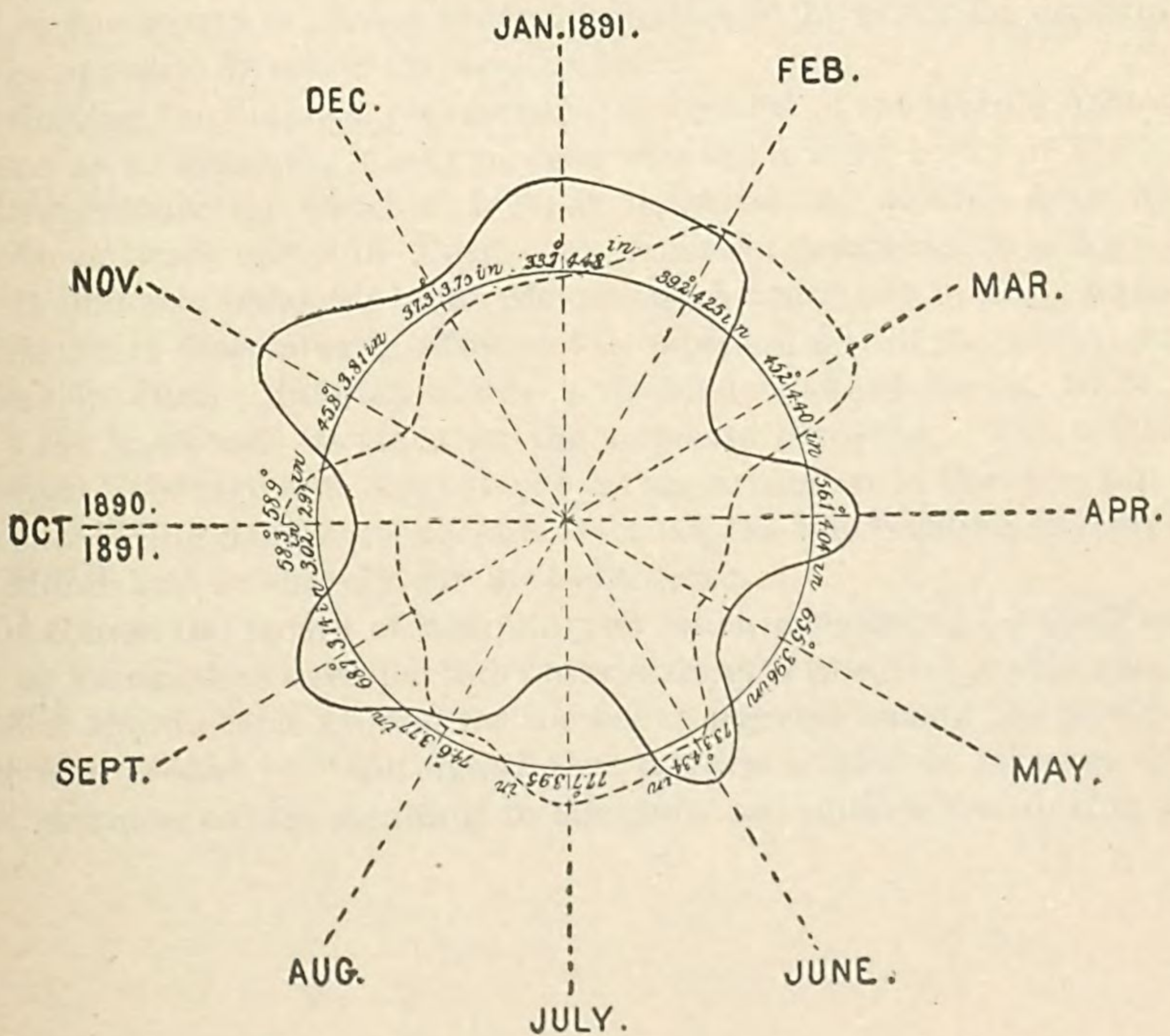
For the purpose of making a graphic showing of the weather conditions which have prevailed during the past crop year, a series of diagrams have been prepared giving the monthly record in four of the principal agricultural districts of the country. The period covered is from October, 1890, to October, 1891, inclusive, thus including the whole crop year from the seeding of winter wheat to the harvest of all crops.

The mechanical arrangement of the diagram is simple and very clear, the course of the seasons being so strikingly presented that a better understanding can be had from its study than can be obtained from any examination of the tabulated record. In the plan followed each line radiating from the center represents one month of the period. The point where the circle crosses these radiating lines represents the normal of the month in either temperature or rainfall, and this normal is further shown in figures of degrees or inches. The heavy black line in its course from month to month represents the actual range of the temperature for the period, running outside of the normal circle where it is above the average for a series of years and inside where it is below. The light dotted line represents rainfall in the same manner. The dis-





: MIDDLE ATLANTIC STATES.



OHIO VALLEY AND TENNESSEE







tance from the normal circle at which these lines cross the month line shows the departure from the normal for that month, and to further facilitate a study of the record the actual departure for each month is given in a table presented at the close of this chapter.

A study of these data reveals some peculiar facts which could hardly be appreciated except when presented by this graphic method. The general trend of temperature was very much the same in the four districts selected during the fall and winter months. In each case October, 1890, was about the same proportion below the normal, while from November to February the weather was considerably warmer than usual except December in the Middle Atlantic States. The sudden bend in the line representing temperature in each diagram, for March, shows the remarkable change from a warm winter to an unusually cold opening of spring. This depression of temperature continued in the Western Gulf States until June, but elsewhere there was an equally sudden reaction, carrying the April average considerably above the normal. Except in the Atlantic States, June was the only month between April and September in which temperature ranges outside the normal circle. During the same period the dotted line representing rainfall passes above the normal only in July, these two conditions characterizing the summer as cool and dry.

Perhaps one of the most peculiar facts to be noted is the remarkable evening up of temperature which appears to occur in periods of six months. In the period under consideration a departure from the normal in one month is almost uniformly balanced by a similar departure in the opposite direction six months later.

Selecting the diagram representing the record of the Middle Atlantic States as an example, it may be seen that the inward curve of the line of temperature for October, 1890, is balanced six months later by a similar outward curve in April. An excess of temperature in November is similarly balanced by an almost equal deficiency in May, while a deficiency in December is offset on the opposite side of the circle by an excess in June. January shows a decided outward curve, while in July the line bends as much in the opposite direction. The relation between February and August proves an exception to the rule, but in the succeeding months it is again asserted, the line bending sharply in for March and as sharply out for September.

Of course the record of a single year when considered by itself can not be assumed as even partially establishing a rule, but in this case at least it affords some ground for the belief popular among the weather-wise who predict by "the signs," that a warm winter is followed by a cool summer, nature meaning to maintain an equilibrium during the year.



For convenience in studying the diagrams the departures both in temperature and rainfall from the normal for each month are thus shown.

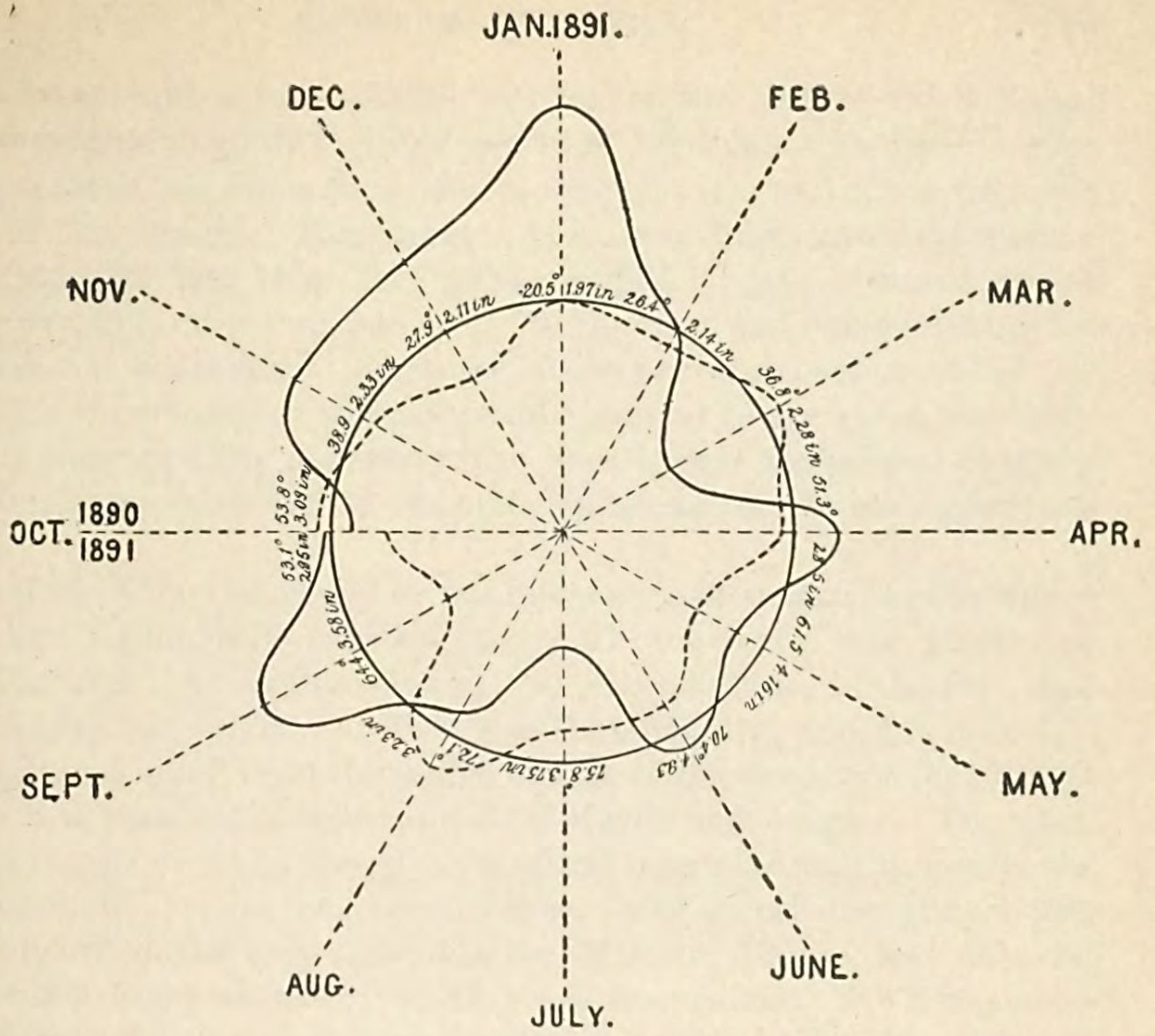
| Months.         | Middle Atlantic States. |            | Western Gulf States. |            | Ohio Valley and Tennessee. |            | Upper Mississippi Valley. |            |
|-----------------|-------------------------|------------|----------------------|------------|----------------------------|------------|---------------------------|------------|
|                 | Temperature.            | Rain-fall. | Temperature.         | Rain-fall. | Temperature.               | Rain-fall. | Temperature.              | Rain-fall. |
| 1890.           | °                       | Inches.    | °                    | Inches.    | °                          | Inches.    | °                         | Inches.    |
| October .....   | -1.3                    | +1.77      | -1.4                 | +0.57      | -1.7                       | +0.82      | -1.2                      | +0.26      |
| November .....  | +1.2                    | -2.73      | +2.8                 | -0.87      | +4.6                       | -1.49      | +3.7                      | -0.51      |
| December .....  | -2.9                    | +0.53      | +2.9                 | -1.91      | +1.1                       | -0.42      | +3.9                      | -1.38      |
| 1891.           |                         |            |                      |            |                            |            |                           |            |
| January .....   | +2.9                    | +1.08      | +1.7                 | +2.38      | +4.4                       | -0.08      | +9.3                      | -0.01      |
| February .....  | +4.4                    | +1.51      | +1.2                 | -1.45      | +3.4                       | +1.89      | +0.2                      | -0.41      |
| March .....     | -2.2                    | +2.10      | -5.2                 | -0.34      | -3.6                       | +2.03      | -5.4                      | +0.36      |
| April .....     | +2.6                    | -1.11      | -0.9                 | -0.15      | +2.1                       | -1.90      | +2.0                      | -0.34      |
| May .....       | -1.7                    | -0.34      | -2.7                 | -3.04      | -2.8                       | -2.04      | -1.6                      | -1.90      |
| June .....      | +0.2                    | -1.15      | +0.5                 | -1.20      | +2.6                       | +0.13      | +0.8                      | -0.83      |
| July .....      | -4.3                    | +2.20      | -2.5                 | +1.40      | -4.6                       | +0.80      | -5.8                      | -0.80      |
| August .....    | +0.9                    | 0.00       | -1.8                 | -1.10      | -0.8                       | -0.30      | -1.3                      | +0.80      |
| September ..... | +2.9                    | -1.50      | +0.5                 | -1.20      | +2.6                       | -1.60      | +5.4                      | -2.50      |
| October .....   | -2.7                    | +0.20      | -1.7                 | -2.80      | -1.8                       | -1.80      | +0.1                      | -1.40      |

#### EFFECT OF THESE CONDITIONS ON THE CROPS.

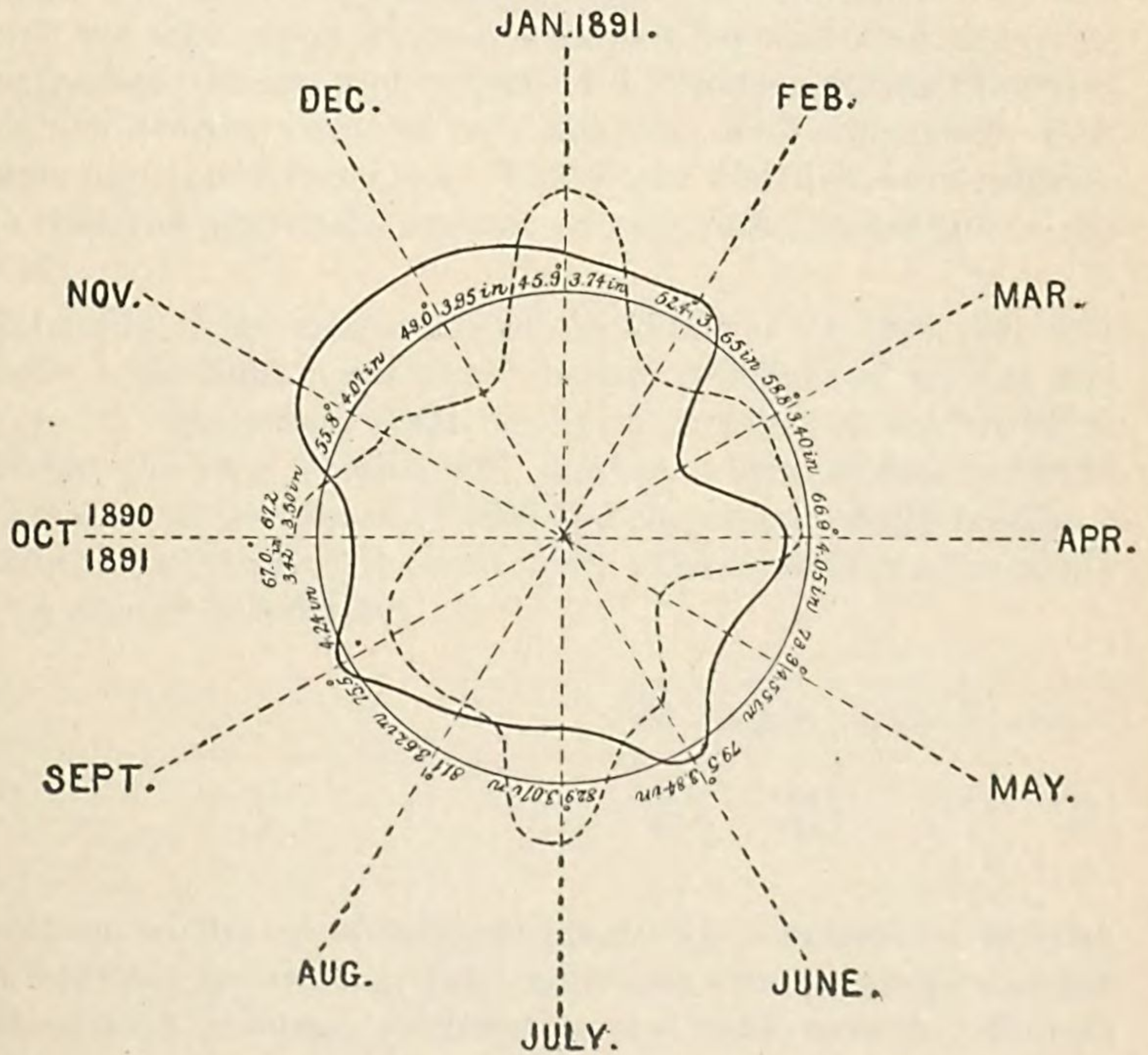
The relatively high temperature of April, with slightly deficient rainfall, gave excellent opportunity for careful preparation of the seed bed for spring crops and for the prosecution of seeding. During May the characteristics which marked the season began to be felt. With but two exceptions, trifling in their nature, there was a marked deficiency in temperature in every district in the country, while the rainfall was almost as generally below the usual supply for the month. Conditions very similar prevailed during the succeeding months of June, July, and August, with the exception that June was marked by a generally sufficient supply of rainfall. The absence of moisture was seriously felt in the upper valley of the Mississippi, especially in Wisconsin and parts of Minnesota.

In this district there was a continued deficiency from March to September, not especially heavy in any part of the period, but long continued enough to materially affect crop conditions during the growing season, and stunting the final yield per acre. The cool weather which the summer developed did not affect the small grain crops, except to make harvest a little late, but as this was prosecuted under favorable conditions of temperature and rainfall, no damage was done. It did, however, seriously affect the prospect of the corn crop, checking growth and development, and as the weeks passed by the apprehensions excited found expression in a general fear for the crop. Cool weather and a lack of moisture made the crop very late when August closed, and in view of the previous record of the season, the chances seemed rather against a larger yield. Frosts in the more northern latitudes during the closing days of the month, coming at a date earlier than usual, and finding the crop short of its usual development, strengthened the



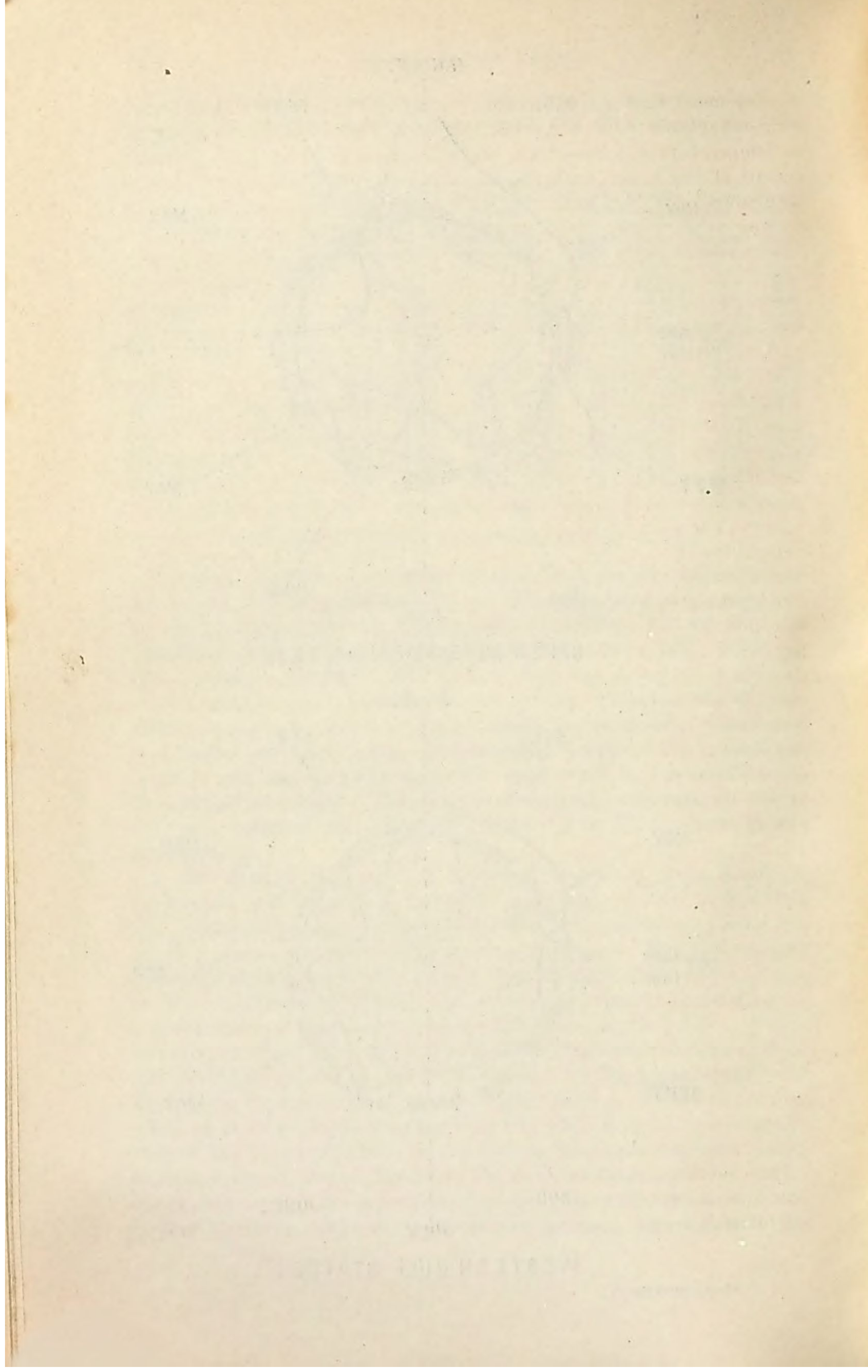


### UPPER MISSISSIPPI VALLEY.



### WESTERN GULF STATES.







apprehension that a considerable portion of the crop would be found unmerchantable in quality. The month of September, however, so far as temperature was concerned, was a complete reversal of the previous record of the season. Temperature rose very high, and as it was accompanied with less than the usual rainfall it gave a month of hot forcing weather, crowding late crops to ripening and compensating for the somewhat unfavorable character of the previous portion of the season. This compensation was noticeably marked in the great corn belt, where it was specially necessary, the excess over the normal monthly average ranging from  $2.6^{\circ}$  in the Ohio Valley to  $5.8^{\circ}$  in the upper lake region.

The effect of the deficiency in rainfall was most marked in the upper Mississippi Valley, although the aggregate deficiency was greater in other districts. An explanation of this may be found in the fact that in this region the summer of 1890 was similarly dry, and the monthly deficiency continued from November of 1890 to September of the present year, with a very slight interruption in March and August. The damage was not wrought by the severity of the season's drought, but by the cumulative effect of its long continuance. The severe drought of 1890, which caused partial crop failure in the Missouri Valley, was followed during the present season by another deficient rainfall, but it was not a continuous deficiency, the normal moisture supply being exceeded during the winter months and again in June. The effect of continued drought being broken, there was ample supply of rainfall for crop production, and the areas upon which the crops were shriveled last year, with an aggregate deficiency of rainfall of 5.85 inches during the growing season, made heavy yields of corn this year, with a deficiency during the same period of 3.79 inches. The proper distribution of rainfall, even more than the aggregate amount of precipitation, influences the rate of yield.

A careful study of the meteorological peculiarities of 1890 and 1891 should throw some light upon some obscure problems of agricultural meteorology. A comparison of the condition averages of the two years which forecast the crop results, will show in a very striking way the adverse character of the season of 1890 and the exceptionally favorable meteorological conditions of the past year. The statement of monthly averages for corn is as follows:

|           | July. | August. | September. | October. |
|-----------|-------|---------|------------|----------|
| 1890..... | 93.1  | 73.3    | 70.1       | 70.6     |
| 1891..... | 92.8  | 90.8    | 91.1       | 92.5     |

The condition on the 1st of July was practically identical in the two years. It is always good at that date unless cold and wet spring weather has interfered with planting, germination and early growth. Though



maize can endure more heat and drought than most other agricultural plants, the danger of long-continued absence of rainfall, especially in July and August, the season of development for this crop, is the greatest to which it is exposed. Note the sudden decline of condition in 1890, due mainly to drought, as indicated by the report of the 1st of August. The August weather intensified the injury, while the favorable influences of September at least prevented further decline and led to slightly more hopeful views in the formulation of the local estimates of October. The record of 1891, in sharp contrast to that of 1890, commencing with quite moderate evidence of early growth, showed that the crop had endured the ordeal of deficient moisture and fervent suns of July with a lowering of only two points, after which a steady improvement continued to October, and later through the autumn season so important in drying the grain and perfecting its quality. This has advanced a crop of medium status, in its germination and stalk growth, to a production above the average, or 27 bushels per acre, not the largest yield known, but one not often exceeded for the entire breadth. To indicate locally the differences of the two years the following statement of condition by States representing sections and including all of the commercial-surplus States, are given for each month:

| States.         | July. |       | August. |       | September. |       | October. |       |
|-----------------|-------|-------|---------|-------|------------|-------|----------|-------|
|                 | 1890. | 1891. | 1890.   | 1891. | 1890.      | 1891. | 1890.    | 1891. |
| New York .....  | 87    | 92    | 83      | 91    | 78         | 92    | 80       | 95    |
| Virginia .....  | 97    | 94    | 92      | 95    | 91         | 95    | 92       | 97    |
| Georgia .....   | 98    | 95    | 90      | 95    | 90         | 97    | 87       | 99    |
| Texas .....     | 90    | 95    | 76      | 93    | 76         | 92    | 72       | 91    |
| Tennessee ..... | 90    | 96    | 72      | 96    | 78         | 98    | 76       | 97    |
| Kentucky .....  | 87    | 95    | 67      | 95    | 76         | 97    | 80       | 98    |
| Ohio .....      | 85    | 93    | 66      | 93    | 56         | 95    | 60       | 97    |
| Indiana .....   | 94    | 95    | 70      | 88    | 70         | 90    | 71       | 94    |
| Illinois .....  | 97    | 96    | 71      | 88    | 68         | 88    | 72       | 92    |
| Iowa .....      | 95    | 94    | 85      | 90    | 75         | 90    | 73       | 95    |
| Missouri .....  | 93    | 88    | 72      | 87    | 77         | 88    | 80       | 86    |
| Kansas .....    | 93    | 82    | 43      | 88    | 42         | 82    | 43       | 83    |
| Nebraska .....  | 91    | 90    | 69      | 89    | 52         | 89    | 54       | 93    |

The strongest contrasts are presented by Kansas, where the July condition was 93 in 1890, and 82 in 1891, while at the close of the season the record stood 43 and 83, respectively, a fall of 50 points in 1890, and a rise of 1 in 1891. The October record emphasizes the differences of the two seasons, opposing varied degrees of depression in 1890 to relatively high condition in 1891.

A noticeable and unusual peculiarity of the year is the almost universal occurrence of medium or large production. Ordinarily, a large yield of one crop is offset by a diminished product of another. The summer crops may be generally good, and the winter grains and grasses seriously injured by the severity of the winter. A comparative failure in wheat has often occurred in a year of abundance of corn, and *vice versa*. In a year like 1881 nearly all crops were poor, but not equally diminished. The present year is an exception of nearly universal



abundance. The record of condition of winter wheat in 1890 and 1891 makes a contrast quite as sharp as that made by that of maize, which is distinctly a summer crop. It is as follows:

|            | April. | May. | June. | July. | September.* |
|------------|--------|------|-------|-------|-------------|
| 1890 ..... | 81     | 80   | 78.1  | 76.2  | 75.5        |
| 1891 ..... | 96.9   | 97.9 | 96.6  | 96.2  | 96.7        |

\* Or condition at harvesting.

There could scarcely be a sharper contrast. The crop of 1890 was in very low condition at the close of winter, and grew worse through the season. That of the present year remained at almost absolutely the same high and nearly perfect figure from start to finish. In the one the damage was mainly done by winter conditions; in the other there was no material injury from climatic causes either in winter or summer.

The oats crop also illustrates the contrasts of those two seasons, showing a constant improvement during the past season, and a regular and rapid decline during the season of 1890, though the June condition of the crop of 1890 was decidedly better than that of the present crop.

The figures are as follows:

|            | June. | July. | August. | September.* |
|------------|-------|-------|---------|-------------|
| 1890 ..... | 89.8  | 81.6  | 70.1    | 64.4        |
| 1891 ..... | 85.1  | 87.6  | 89.5    | 90.7        |

\* Or time of harvesting.

While the tables of rainfall and temperature show some of these contrasts in a general way, it will be found, upon sufficient meteorological investigation, that the *distribution* of rainfall is a larger factor in crop production than mere quantity, and that a combination of excessive moisture and great heat for a period of two days often does more damage to grain and fruit than a drought of two months. The record of averages is useful, but it can not explain all the mysteries still unsolved in agricultural meteorology.

#### A BRIEF OF CROP RECORDS.

Weather conditions were generally favorable in the preparation of the seed bed for winter grains. The soil was easily worked, except upon limited areas, and sowing was but little interrupted. On the Atlantic coast it was delayed a little by occasional rains, but the desired area was put in and the autumn rains secured prompt germination and good fall growth. Throughout the central West, especially, seeding was accompanied and followed by gentle rains sufficient to properly pack the earth and insure thrifty growth before the advent of cold weather. In portions of Missouri and Kansas and in Nebraska seeding



was prosecuted under less favorable circumstances, the severe drought of last summer interfering with the preparation of the bed, delaying sowing, and making germination late. It was broken, however, in season to secure good though late growth, and the mild winter was sufficient to offset the disadvantage of a late start, making spring condition so good that in many districts correspondents declared it the best ever known. California enjoyed a favorable fall and winter season, sufficient moisture in the drier districts, with no excess in the valleys, which occasionally suffer from excessive rainfall. A dry seed bed in Oregon was moistened early enough to secure good stand and growth, and the mild winter further stimulated condition.

The favorable meteorological conditions which everywhere prevailed during autumn and early winter sent the plant into winter quarters well developed, and the mild weather of January and February in many districts induced continuous winter growth. Less than the usual degree of protection by snowfall was afforded, but much less than usual was required, and the covering was present when needed. Brown and bare spots were not frequently present even in the most exposed situations, and many correspondents noted with surprise that on areas liable to damage from winter killing not even the tips of the blades were discolored.

As spring advanced the crop not only kept its promising status but continued to improve. Some frost and deficient moisture threatened the crop in the Middle States, causing some anxiety of growers, which was happily dispelled before a serious deterioration occurred. The July returns continued and confirmed the most favorable record of winter grains ever made in any season since the Department statistical service was organized.

Spring wheat, like winter, was grown on an increased area. The partial failure of the previous year, and the advance in price, with possibly an expectation of a decreasing world's production, stimulated the seeding of a larger breadth. This careful watch for changes of area that will affect price, this outlook for the best pecuniary results of crop distribution, is precisely what may be expected to prevent any marked decline in wheat growing. The American farmer is far more likely to hinder progress and limit profits by too precipitate change than by a wise forecast and patient waiting for more profitable results that require time for development. The wheat crop as a whole, enlarged nearly 9 per cent in the preliminary estimate, is found to be fully 10 per cent more than the reduced area of the previous year, though less than 5 per cent more than the breadth of 1889.

The soil of much of the spring-wheat region was somewhat too dry for early seeding and prompt germination. A good stand was not secured in Wisconsin by reason of drought, and that which germinated was not in good condition at first, while wheat on moist soils looked fairly well. In Eastern Minnesota there was also some dete-



rioration from drought, which was not long continued, being followed by refreshing rains in season to make a moderate June record. In South Dakota the early spring was more favorable than in North Dakota. In the latter part of May this condition was reversed, and the growers of the North State rejoiced in refreshing showers while those of South Dakota saw the bright prospect impaired by deficiency of moisture. Fears of impairment in Nebraska were dissipated by seasonable rains. The soil was also somewhat too dry in Washington, but improvement followed there also in May. During the month of June the condition improved everywhere except in Wisconsin. Improvement continued in July in all States except Washington, where hot winds wrought injury in certain districts. The August report indicated "a product of wheat but little short of the capabilities of the soil under the most favorable conditions." The harvest confirmed this estimate as to a large part of the area, with some discount for impairment in South Dakota and Washington.

The corn crop was somewhat late; drought in early spring and cool weather in May delayed planting to some extent. June was warm, stimulating growth, and putting the crop in good condition at the date of the July report. In portions of Kentucky and Ohio rains delayed cultivation. Some replanting was necessary to fill gaps in the stand. In Kansas and Nebraska excessive rains in June washed the fields and prevented proper cultivation. The semi-arid belt, formerly the "Great American Desert," received a bountiful supply of moisture, and became green with a vigorous growth of maize. The month of July brought generally abundant moisture, cool weather, good color, but not so uniformly rapid growth and advanced development. On the first of September the crop was reported late in earing from cool nights, with entire absence of frost except in certain northern districts. The month of September was remarkable for high temperature, supplementing the deficient maturity of August, and ripening thoroughly the latest corn that was expected to make a crop. Fine weather continued in October, still further advancing the quality of the crop, which became one above the average in both quality and quantity.

Potatoes early gave promise of a good crop, condition averaging 95.3 against 91.7 in July of 1891. While the decline in 1890 was rapid and serious, resulting in a very low yield, the condition has been well sustained this year, considering the liability to rot in the latter part of the season. The comparison of condition is as follows:

|           | July. | August. | September. | October. |
|-----------|-------|---------|------------|----------|
| 1890..... | 91.7  | 77.4    | 65.7       | 61.7     |
| 1891..... | 95.3  | 96.5    | 94.8       | 91.3     |

The tendency to rot exhibited early in certain districts was overborne by the fine weather and high temperature of September, and the loss



from this cause was local and confined mostly to the Eastern and Middle States, making little show in reduction of the aggregate yield. The result is the largest crop ever reported.

The comparative failure of the oats crop in 1890, from the effects of the drought and the *aphis* combined, was somewhat discouraging, tending to prevent increase of area. The crop, however, had nearly the breadth of that of 1890, and shared in the favorable influences of the season, making a product second only to the largest ever grown.

The barley crop has increased largely in average, and has made a good yield, making the largest aggregate ever grown in this country. Rye and buckwheat have also shared the favoring influences of the season, made excellent growth, matured seasonably, and returned bountiful harvests as a reward of the farmers' labors.

The production of sugar from cane is gradually increasing. An enlargement of area has been made this year in Louisiana, and a medium product is expected. The October report stated that plant cane was not improving, though stubble cane was excellent, and with the increased acreage would probably make the production equal to that of 1890. The returns of November were more favorable, and improvement in condition was noted.

The beet sugar industry has been signalized by the establishment of new plants for manufacture. The results in production will be ascertained and made public as soon as practicable.

The hay crop is one of relatively large yield. Frosts in May reduced condition along the Atlantic coast, and deficient moisture shortened the crop in the lighter soils of this region. The product of clover hay was smaller than usual, owing more to the condition of old sod injured by severe winters than on account of winter killing of the past season. In Michigan and Wisconsin the dry weather made a very light crop, which was secured in excellent condition. The upper portion of the Ohio Valley had only a medium product, Indiana and Illinois reported a good average, and the States west of Mississippi comparatively heavy production. In the South a good crop was secured on an enlarged area.

The yield of tobacco is somewhat above the average, and with the breadth grown insures sufficient supply for the wants for domestic consumption and for any probable demand for exportation. The seed-leaf districts already feel the effect of the lessened competition of Sumatra leaf since the present customs law went into effect, and the status of the industry, especially in the Connecticut Valley, is much better than during recent years. Prices have advanced, a hopeful feeling is apparent, and the indications are that an increased breadth next year will be planted to supply the demands of the home market.

The June return of fruit was unusually favorable. Some impairment of condition and reduction of expectation occurred during the month. In the Eastern and Middle States the prospect was more favorable for



summer and fall varieties of apples than for winter fruit. In New York and Pennsylvania the dropping of fruit early in the season was unusually heavy. Late spring frosts, the bane of fruit-growing in this country, destroyed the blossoms or the tender fruit in many districts, either partially or wholly. Ohio and Michigan suffered severely from May frosts while the trees were in bloom, reducing the crop heavily. West of the Mississippi the apple crop was generally a good one.

The final result, on the whole, was a crop of medium yield, abundant in comparison with last year, somewhat deficient in the great centers of commercial supply, especially Michigan and northern Ohio, and not quite an average in western New York; medium in the Eastern and Middle States, and large generally in the Missouri Valley, the valleys of the mountains, and the Pacific coast region.

There was a large crop of peaches in the commercial as well as farm orchards, distributed quite generally, with a better condition than apples through the season.

The subtropical and tropical fruits made good yields, as a rule. These branches of fruit culture are constantly enlarging, making steady inroads on the imports of foreign citrus fruits, prunes, raisins, and other dried fruits. In California this progress is wonderful, and it is scarcely less so in Florida. A very rapid development in Louisiana orange-growing is manifest.

A large increase of area in flax is reported. The increase is entirely west of the Mississippi and confined almost exclusively to the States of Minnesota, Iowa, Kansas, Nebraska, and the Dakotas. About 97 per cent of the crop, which is grown almost exclusively for seed, is produced west of the Mississippi, whereas the census of 1880 showed that 65 per cent of the total production was east of that river. An investigation indicates the occupancy of nearly two million acres in that crop; the results of recent investigation show an acreage of 1,927,293 acres, and a product of 15,455,272 bushels, or an increase of about 50 per cent over that of 1889.

The fiber is not extensively used. In some of the more eastern districts there are scattered mills which manufacture a coarse tow for upholstering purposes. Formerly the stalk was burned or left to rot after the seed was taken, and is still the case in certain districts. Now it is oftener stacked, like straw, and cattle are allowed to feed upon it, which they do with apparent relish.

Experiments have been made in growing a fine fiber with good success when undertaken by persons familiar with growing and dressing the fiber in foreign countries.

The wool product of the year shows a larger weight of fleece than usual, from better care and a favorable winter for growth and health of the flocks. The estimated product is 285,000,000 pounds from the spring and fall fleeces and from the sheep and lambs slaughtered during the year. The price of wool has been low throughout the world, yet the



decline has been less in this than in other countries, and farmers are encouraged to expect a steady and strong demand for wool in the future.

#### THE MAIN CEREAL CROPS—CORN.

There was estimated last year a loss of acreage, from abandonment in consequence of the severity of the drought in certain sections, of 6,000,000 acres of the breadth planted. That loss was substantially made good in the planting of the present year, the area harvested being placed at 76,204,515 acres, producing 2,060,154,000 bushels. The total for corn has only been exceeded once before, in 1889, when the estimated product was 2,112,892,000 bushels. The yield per acre is the same as in 1889, 27 bushels, which is a bushel more than the accepted average of former periods and about three bushels more than the average of the last ten years, in which scarcely any very poor crops have occurred. This yield will assure those who view statistics with near-sighted vision that the fertility of our cornfields is not exhausted, and that other causes of crop shortage must be considered in the fluctuations of yield that are the most noticeable feature of crop records.

The decadence of corn-growing in Illinois, with the constant tendency to diversification in progress there, and the prominence of maize in Iowa, where the estimates make an area of 9,560,716 acres and a product of 350,878,000 bushels, are noticeable changes in crop distribution. The order of prominence this year is Iowa, Illinois, Missouri, Nebraska, Kansas, Indiana, and Ohio, in the corn surplus belt.

Fifty years ago corn was the great American crop, and it must long stand at the front in our arable culture. In 1840 the product was officially stated at 377,531,875 bushels. The present crop is nearly six times as large, though the population is less than four times as much as in 1840. It is remarkable that this production has so far outdistanced the movement of population, but the fact is due to its various uses in every branch of farm feeding and in meat production. The South was then the center of corn-growing, and Tennessee the first State in rank in its production, followed in order by Kentucky, Virginia, Ohio, Indiana, North Carolina, and Illinois. The movement of this center has been northward and westward, passing from Ohio to Illinois, and now beyond the Mississippi to Iowa. The estimates for 1891 are as follows:

#### *Corn, 1891.*

| States and Territories. | Acres.      | Bushels.     | Value.       |
|-------------------------|-------------|--------------|--------------|
| Maine .....             | 29, 526     | 1, 107, 000  | \$885, 780   |
| New Hampshire .....     | 37, 246     | 1, 333, 000  | 1, 026, 723  |
| Vermont .....           | 57, 638     | 2, 144, 000  | 1, 629, 542  |
| Massachusetts .....     | 54, 134     | 2, 138, 000  | 1, 667, 869  |
| Rhode Island .....      | 13, 045     | 450, 000     | 355, 542     |
| Connecticut .....       | 58, 663     | 2, 112, 000  | 1, 605, 020  |
| New York .....          | 694, 328    | 22, 080, 000 | 14, 572, 556 |
| New Jersey .....        | 360, 915    | 12, 343, 000 | 8, 023, 140  |
| Pennsylvania .....      | 1, 397, 211 | 46, 527, 000 | 26, 520, 462 |
| Delaware .....          | 232, 061    | 5, 105, 000  | 2, 807, 938  |
| Maryland .....          | 740, 425    | 18, 881, 000 | 10, 006, 844 |



## Corn, 1891—Continued.

| States and Territories. | Acres.      | Bushels.      | Value.       |
|-------------------------|-------------|---------------|--------------|
| Virginia.....           | \$2,004,360 | \$39,486,000  | \$19,742,946 |
| North Carolina.....     | 2,672,054   | 37,676,000    | 21,852,057   |
| South Carolina.....     | 1,607,755   | 18,650,000    | 13,054,971   |
| Georgia.....            | 3,100,745   | 37,829,000    | 26,102,071   |
| Florida.....            | 496,342     | 5,460,000     | 4,367,810    |
| Alabama.....            | 2,539,011   | 32,245,000    | 20,314,627   |
| Mississippi.....        | 1,951,651   | 29,665,000    | 17,205,755   |
| Louisiana.....          | 1,082,392   | 18,725,000    | 11,235,229   |
| Texas.....              | 3,622,327   | 70,635,000    | 38,849,157   |
| Arkansas.....           | 2,002,575   | 42,455,000    | 19,529,111   |
| Tennessee.....          | 3,636,664   | 82,552,000    | 35,497,477   |
| West Virginia.....      | 691,885     | 18,888,000    | 9,822,000    |
| Kentucky.....           | 2,759,832   | 82,795,000    | 33,117,984   |
| Ohio.....               | 2,940,368   | 94,092,000    | 38,577,628   |
| Michigan.....           | 1,055,363   | 31,133,000    | 14,943,940   |
| Indiana.....            | 3,712,380   | 123,622,000   | 46,976,457   |
| Illinois.....           | 7,011,336   | 234,880,000   | 86,905,510   |
| Wisconsin.....          | 1,113,042   | 29,718,000    | 13,076,317   |
| Minnesota.....          | 814,556     | 21,586,000    | 8,418,436    |
| Iowa.....               | 9,560,716   | 350,878,000   | 105,263,483  |
| Missouri.....           | 6,796,318   | 203,210,000   | 77,219,765   |
| Kansas.....             | 5,314,337   | 141,893,000   | 48,243,551   |
| Nebraska.....           | 4,762,840   | 167,652,000   | 43,589,512   |
| California.....         | 161,470     | 5,571,000     | 3,955,203    |
| Oregon.....             | 9,613       | 260,000       | 184,281      |
| Colorado.....           | 43,397      | 933,000       | 494,509      |
| North Dakota.....       | 38,922      | 701,000       | 280,238      |
| South Dakota.....       | 934,130     | 21,018,000    | 7,356,274    |
| New Mexico.....         | 57,415      | 1,051,000     | 756,500      |
| Utah.....               | 35,527      | 675,000       | 405,008      |
| Total.....              | 76,204,515  | 2,060,154,000 | 836,439,228  |

For comparative purposes the records of four corn crops is presented. An examination of this record will disclose a range of yield from 18.6 bushels per acre in 1881 to 27.6 bushels in 1880. The low yields of 1881, 1883, 1886, and 1887 were due to drought. The absence of severe drought in most of the period from 1870 to 1889 accounts for the larger yields of that period. The past decade began and ended with a yield above the average. This record is as follows:

| Years.                                     | Total production. | Total area of crop. | Total value of crop. | Average value per bushel. | Average yield per acre. | Average value per acre. |
|--------------------------------------------|-------------------|---------------------|----------------------|---------------------------|-------------------------|-------------------------|
|                                            | <i>Bushels.</i>   | <i>Acres.</i>       |                      | <i>Cents.</i>             | <i>Bushels.</i>         |                         |
| 1880.....                                  | 1,717,434,543     | 62,317,842          | \$679,714,499        | 39.6                      | 27.6                    | \$10.91                 |
| 1881.....                                  | 1,194,916,000     | 64,262,025          | 759,482,170          | 63.6                      | 18.6                    | 11.82                   |
| 1882.....                                  | 1,617,025,100     | 65,659,545          | 783,867,175          | 48.5                      | 24.6                    | 11.94                   |
| 1883.....                                  | 1,551,066,895     | 68,301,889          | 658,051,485          | 42.4                      | 22.7                    | 9.63                    |
| 1884.....                                  | 1,795,528,000     | 69,683,780          | 640,735,560          | 35.7                      | 25.8                    | 9.19                    |
| 1885.....                                  | 1,936,176,000     | 73,130,150          | 635,674,630          | 32.8                      | 26.5                    | 8.69                    |
| 1886.....                                  | 1,665,441,000     | 75,694,208          | 610,311,000          | 36.6                      | 22.0                    | 8.06                    |
| 1887.....                                  | 1,456,161,000     | 72,392,720          | 646,106,770          | 44.4                      | 20.1                    | 8.93                    |
| 1888.....                                  | 1,987,790,000     | 75,672,763          | 677,561,580          | 34.1                      | 26.3                    | 8.95                    |
| 1889.....                                  | 2,112,892,000     | 78,319,651          | 597,918,829          | 28.3                      | 27.0                    | 7.63                    |
| Total.....                                 | 17,034,430,538    | 705,434,573         | 6,689,423,698        | .....                     | .....                   | .....                   |
| Average for 10 years—<br>1880 to 1889..... | 1,703,443,054     | 70,543,457          | 668,942,370          | 39.3                      | 24.1                    | 9.48                    |
| Average for 10 years—<br>1870 to 1879..... | 1,184,486,954     | 43,741,331          | 504,571,048          | 42.6                      | 27.1                    | 11.54                   |
| 1890.....                                  | 1,489,970,000     | 71,970,763          | 754,433,451          | 50.6                      | 20.7                    | 10.48                   |
| 1891.....                                  | 2,060,154,000     | 76,204,515          | 836,439,228          | 40.6                      | 27.0                    | 10.98                   |
| Total.....                                 | 3,550,124,000     | 148,175,278         | 1,590,872,679        | .....                     | .....                   | .....                   |
| Average for 2 years—<br>1890 to 1891.....  | 1,775,062,000     | 74,087,639          | 795,436,340          | 44.8                      | 24.0                    | 10.74                   |



The following table presents the record of exports in maize during the past twenty years, and shows that only about one bushel in twenty-five is exported in the form of grains, and that the export depends on the home price, and has little influence in making home values.

*Production and export of corn.*

| Years.    | Production.     | Exports.        | Expor-<br>tation. | Years.    | Production.     | Exports.        | Expor-<br>tation. |
|-----------|-----------------|-----------------|-------------------|-----------|-----------------|-----------------|-------------------|
|           | <i>Bushels.</i> | <i>Bushels.</i> | <i>Per cent.</i>  |           | <i>Bushels.</i> | <i>Bushels.</i> | <i>Per cent.</i>  |
| 1870..... | 1,094,255,000   | 10,673,553      | 1.0               | 1882..... | 1,617,025,100   | 41,655,653      | 2.6               |
| 1871..... | 991,898,000     | 35,727,010      | 3.6               | 1883..... | 1,551,066,895   | 46,258,606      | 3.0               |
| 1872..... | 1,092,719,000   | 40,154,374      | 3.7               | 1884..... | 1,795,528,000   | 52,876,456      | 2.9               |
| 1873..... | 932,274,000     | 35,985,834      | 3.9               | 1885..... | 1,936,176,000   | 64,829,617      | 3.3               |
| 1874..... | 850,148,500     | 30,025,036      | 3.5               | 1886..... | 1,665,441,000   | 41,368,584      | 2.5               |
| 1875..... | 1,321,069,000   | 50,910,532      | 3.9               | 1887..... | 1,456,161,000   | 25,360,869      | 1.7               |
| 1876..... | 1,283,827,500   | 72,652,611      | 5.7               | 1888..... | 1,987,790,000   | 70,841,673      | 3.6               |
| 1877..... | 1,342,558,000   | 87,192,110      | 6.5               | 1889..... | 2,112,892,000   | 103,418,709     | 4.9               |
| 1878..... | 1,388,218,750   | 87,884,892      | 6.3               | 1890..... | 1,489,970,000   | 32,041,529      | 2.2               |
| 1879..... | 1,754,591,676   | 99,572,329      | 5.7               |           |                 |                 |                   |
| 1880..... | 1,717,434,543   | 93,648,147      | 5.5               | Annual    |                 |                 |                   |
| 1881..... | 1,194,916,000   | 44,340,683      | 3.7               | average.  | 1,455,998,094   | 55,591,372      | 3.8               |

WHEAT.

This country has led the van in wheat-growing for more than a decade and a half. France stands next, followed by India and Russia. This year's crop of the United States is the largest ever grown in any country, and the largest rate of yield ever recorded since the organization of this department.

The population of the country is between three and four times as large as in 1840; the wheat crop of 1891 is seven times as large as at that date. Four and one-third bushels for each unit of population then; nine and one-fifth bushels now. There has been much written for twenty years past, the result of crude generalizing from agricultural data, to the effect that wheat-growing is declining, moving westward, abandoned in the old States and precariously developing in the new. The decline of flour milling in Rochester is cited as evidence of inability of western New York farmers to produce wheat. Ohio, Michigan, Illinois, Dakota, and the Pacific Coast are made almost simultaneously landmarks of progress in wheat-growing and monuments recording its decay. A little thought, a review of the whole field of fact, will show the kaleidesropic changes incident to the work of diversifying and molding our primitive agriculture. Western New York produces as much wheat as ever, and fruit and vegetables and other products of tenfold greater aggregate value. So do Ohio and Michigan. Wheat is grown no less, but other products much more. Simply, wheat has passed out of the category of exclusive cropping, the primitive stage of agricultural development in which no real progress is possible.

The one point totally unknown to pessimists in breadstuffs is the possibility of an increase in yield per acre. The difference between the past season and the present is an advance in yield of almost 50 per cent, and an aggregate product, with the aid of some increase of area, of more than two hundred million bushels. The yield is now but 15.3, and should be made 20 at least by improved cultivation and judicious fertilization.



Cases of yield at the rate of 50 bushels per acre are reported to this Division by individual farmers, more at 30 to 40, and numerous records of 25 to 30 are made in New England, the Ohio Valley, and throughout the entire wheat belt, in some instances even in the South, where State yields usually range from 6 to 12, in some instances 15 bushels. In the best wheat districts the average this year approximates 20 bushels, and in some States exceeds that figure. Returns from individuals of our special list of 125,000 farmers make an aggregate of more than twenty-two million bushels actually grown by them on nearly a million and a quarter acres, averaging an actual yield of 18 bushels per acre. This fact indicates the possibilities of increase of yield. The acreage cultivated the present year, if brought to a yield of 25 bushels per acre, equal to that of the sands of Holland and less than that of the gravelly clays of England, would produce a thousand million bushels of wheat. It will never be done while our land is so cheap, but can be done in the future, and should be. Our low usual rate of yield is simply a disgrace to American agriculture, but it will continue only while that agriculture remains in its primitive stage.

The following table gives the area, product, and value of wheat by States, as estimated at the close of the year by the Statistician:

| States and Territories. | Acres.     | Bushels.    | Value.      |
|-------------------------|------------|-------------|-------------|
| Maine.....              | 41,017     | 669,000     | \$735,435   |
| New Hampshire.....      | 8,972      | 148,000     | 170,244     |
| Vermont.....            | 19,673     | 344,000     | 392,477     |
| Connecticut.....        | 1,838      | 31,000      | 32,808      |
| New York.....           | 640,540    | 10,633,000  | 10,632,964  |
| New Jersey.....         | 138,833    | 2,124,000   | 2,209,111   |
| Pennsylvania.....       | 1,337,437  | 20,864,000  | 20,864,017  |
| Delaware.....           | 97,634     | 1,250,000   | 1,249,715   |
| Maryland.....           | 540,494    | 8,107,000   | 8,107,410   |
| Virginia.....           | 850,073    | 7,651,000   | 7,650,657   |
| North Carolina.....     | 731,573    | 4,975,000   | 5,074,190   |
| South Carolina.....     | 180,395    | 992,000     | 1,091,390   |
| Georgia.....            | 309,743    | 2,323,000   | 2,555,380   |
| Alabama.....            | 281,327    | 2,251,000   | 2,475,678   |
| Mississippi.....        | 61,965     | 483,000     | 483,327     |
| Texas.....              | 536,247    | 6,435,000   | 5,598,419   |
| Arkansas.....           | 232,940    | 2,236,000   | 2,012,602   |
| Tennessee.....          | 1,198,553  | 11,626,000  | 10,812,147  |
| West Virginia.....      | 332,295    | 3,423,000   | 3,285,733   |
| Kentucky.....           | 1,037,870  | 13,181,000  | 11,862,854  |
| Ohio.....               | 2,662,603  | 45,531,000  | 41,888,070  |
| Michigan.....           | 1,606,670  | 30,205,000  | 27,486,910  |
| Indiana.....            | 2,917,518  | 52,807,000  | 45,414,085  |
| Illinois.....           | 1,945,832  | 35,025,000  | 29,771,230  |
| Wisconsin.....          | 966,128    | 13,043,000  | 10,955,892  |
| Minnesota.....          | 3,143,917  | 55,333,000  | 43,159,692  |
| Iowa.....               | 1,803,036  | 27,586,000  | 22,345,025  |
| Missouri.....           | 1,892,082  | 25,732,000  | 20,585,852  |
| Kansas.....             | 3,539,760  | 54,866,000  | 40,052,384  |
| Nebraska.....           | 1,205,350  | 18,080,000  | 13,198,583  |
| California.....         | 2,815,007  | 36,595,000  | 34,765,336  |
| Oregon.....             | 692,055    | 13,149,000  | 11,571,160  |
| Nevada.....             | 20,338     | 372,000     | 323,801     |
| Colorado.....           | 100,832    | 2,037,000   | 1,486,868   |
| Arizona.....            | 27,227     | 395,000     | 296,094     |
| North Dakota.....       | 2,927,274  | 52,105,000  | 36,473,834  |
| South Dakota.....       | 1,954,883  | 29,714,000  | 21,394,240  |
| Idaho.....              | 90,531     | 1,811,000   | 1,520,921   |
| Montana.....            | 92,803     | 1,856,000   | 1,559,090   |
| New Mexico.....         | 93,328     | 1,073,000   | 880,083     |
| Utah.....               | 136,764    | 2,393,000   | 1,795,028   |
| Washington.....         | 698,040    | 12,216,000  | 9,161,775   |
| Wyoming.....            | 5,500      | 110,000     | 90,200      |
| Total.....              | 39,916,897 | 611,780,000 | 513,472,711 |



The following table presents the records of the past decade, in comparison with the averages of the preceding decade. Unlike corn, wheat presents nearly the same average of yield as in the ten years of 1870, and for two years of a new decade a higher rate than has been heretofore, due to the abnormal yield of the present year. It will be seen that the aggregate value is far above that of any previous year, and \$142,000,000 more than average of the last decade.

| Years.                                   | Total production. | Total area of crop. | Total value of crop. | Average value per bushel. | Average yield per acre. | Average value per acre. |
|------------------------------------------|-------------------|---------------------|----------------------|---------------------------|-------------------------|-------------------------|
|                                          | <i>Bushels.</i>   | <i>Acres.</i>       |                      | <i>Cents.</i>             | <i>Bushels.</i>         |                         |
| 1880.....                                | 498,549,868       | 37,986,717          | \$474,201,850        | 95.1                      | 13.1                    | \$12.48                 |
| 1881.....                                | 383,280,090       | 37,709,020          | 456,880,427          | 119.2                     | 10.2                    | 12.12                   |
| 1882.....                                | 504,185,470       | 37,067,194          | 444,602,125          | 88.2                      | 13.6                    | 11.99                   |
| 1883.....                                | 421,086,160       | 36,455,593          | 383,649,272          | 91.1                      | 11.6                    | 10.52                   |
| 1884.....                                | 512,765,000       | 39,475,885          | 330,862,260          | 64.5                      | 13.0                    | 8.38                    |
| 1885.....                                | 357,112,000       | 34,189,246          | 275,320,390          | 77.1                      | 10.4                    | 8.05                    |
| 1886.....                                | 457,218,000       | 36,806,184          | 314,226,020          | 68.7                      | 12.4                    | 8.54                    |
| 1887.....                                | 456,329,000       | 37,641,783          | 310,612,960          | 68.1                      | 12.1                    | 8.25                    |
| 1888.....                                | 415,868,000       | 37,336,138          | 385,248,030          | 92.6                      | 11.1                    | 10.32                   |
| 1889.....                                | 490,560,000       | 38,123,859          | 342,491,707          | 69.8                      | 12.9                    | 8.98                    |
| Total .....                              | 4,496,953,588     | 372,791,619         | 3,718,095,041        | -----                     | -----                   | -----                   |
| Average, 10 years, 1880<br>to 1889 ..... | 449,695,359       | 37,279,162          | 371,809,504          | 82.7                      | 12.1                    | 9.97                    |
| Average, 10 years, 1870<br>to 1879 ..... | 312,152,728       | 25,187,414          | 327,407,258          | 104.9                     | 12.4                    | 13.00                   |
| 1890.....                                | 399,262,000       | 36,087,154          | 334,773,678          | 83.8                      | 11.1                    | 9.28                    |
| 1891.....                                | 611,780,000       | 39,916,897          | 513,472,711          | 83.9                      | 15.3                    | 12.86                   |
| Total .....                              | 1,011,042,000     | 76,004,051          | 848,246,389          | -----                     | -----                   | -----                   |
| Average, 2 years, 1890<br>and 1891.....  | 505,521,000       | 38,002,026          | 424,123,195          | 83.9                      | 13.3                    | 11.16                   |

## OATS.

The area of oats has been decreased by the semifailure of the previous crop, due to drought and the *aphis*, yet the higher rate of yield has brought the crop nearly up to the aggregate production of 1889. The estimates of the year are as follows:

|                     | Acres.    | Bushels.   | Value.      |
|---------------------|-----------|------------|-------------|
| Maine.....          | 99,601    | 3,446,000  | \$1,550,788 |
| New Hampshire.....  | 31,359    | 1,098,000  | 504,880     |
| Vermont.....        | 107,657   | 4,037,000  | 1,655,227   |
| Massachusetts.....  | 23,275    | 768,000    | 360,995     |
| Rhode Island.....   | 6,741     | 226,000    | 106,137     |
| Connecticut.....    | 38,239    | 1,147,000  | 516,227     |
| New York.....       | 1,329,984 | 41,894,000 | 15,919,908  |
| New Jersey.....     | 138,706   | 3,884,000  | 1,553,507   |
| Pennsylvania.....   | 1,239,101 | 33,704,000 | 12,470,312  |
| Delaware.....       | 24,078    | 489,000    | 190,625     |
| Maryland.....       | 111,944   | 2,127,000  | 808,236     |
| Virginia.....       | 618,404   | 6,617,000  | 2,712,938   |
| North Carolina..... | 538,938   | 5,120,000  | 2,611,155   |
| South Carolina..... | 385,361   | 4,085,000  | 2,491,744   |
| Georgia.....        | 618,626   | 7,238,000  | 4,342,754   |
| Florida.....        | 52,469    | 598,000    | 370,851     |
| Alabama.....        | 405,344   | 5,188,000  | 3,113,042   |
| Mississippi.....    | 325,793   | 3,747,000  | 2,173,040   |
| Louisiana.....      | 51,542    | 634,000    | 329,663     |
| Texas.....          | 652,059   | 15,975,000 | 7,508,460   |
| Arkansas.....       | 299,708   | 4,945,000  | 2,076,976   |
| Tennessee.....      | 614,483   | 5,960,000  | 2,384,194   |
| West Virginia.....  | 137,844   | 2,385,000  | 953,880     |



|                    | Acres.     | Bushels.    | Value.      |
|--------------------|------------|-------------|-------------|
| Kentucky .....     | 441,894    | 8,175,000   | \$3,024,764 |
| Ohio .....         | 911,292    | 28,523,000  | 9,412,735   |
| Michigan .....     | 931,677    | 30,280,000  | 9,689,441   |
| Indiana .....      | 895,067    | 21,034,000  | 6,730,904   |
| Illinois .....     | 3,068,930  | 111,095,099 | 31,106,674  |
| Wisconsin .....    | 1,481,919  | 49,348,000  | 13,817,413  |
| Minnesota .....    | 1,425,080  | 52,015,000  | 14,044,163  |
| Iowa .....         | 2,795,003  | 102,577,000 | 26,669,919  |
| Missouri .....     | 1,158,308  | 27,568,000  | 7,994,642   |
| Kansas .....       | 1,237,740  | 37,132,000  | 10,025,694  |
| Nebraska .....     | 1,368,977  | 48,599,000  | 11,177,697  |
| California .....   | 84,786     | 2,416,000   | 1,449,841   |
| Oregon .....       | 233,037    | 7,341,000   | 3,009,673   |
| Colorado .....     | 109,790    | 3,579,000   | 1,360,079   |
| North Dakota ..... | 496,926    | 16,647,000  | 4,328,225   |
| South Dakota ..... | 724,092    | 23,388,000  | 5,847,043   |
| Idaho .....        | 37,898     | 1,326,000   | 663,215     |
| Montana .....      | 94,747     | 3,648,000   | 1,750,925   |
| New Mexico .....   | 16,330     | 359,000     | 197,593     |
| Utah .....         | 39,646     | 1,288,000   | 541,168     |
| Washington .....   | 177,466    | 6,744,000   | 2,764,920   |
| Total .....        | 25,581,861 | 738,394,000 | 232,312,267 |

The following table shows a marvelous advance in production of oats during the past decade, an increase of area of more than 50 per cent. The present rate of yield is the largest in that period, and exceeds the average rate of yield of the decade from 1870.

| Years.                                | Total production. | Total area of crop. | Total value of crop. | Average value per bushel. | Average yield per acre. | Average value per acre. |
|---------------------------------------|-------------------|---------------------|----------------------|---------------------------|-------------------------|-------------------------|
|                                       | <i>Bushels.</i>   | <i>Acres.</i>       |                      | <i>Cents.</i>             | <i>Bushels.</i>         |                         |
| 1880 .....                            | 417,885,380       | 16,187,977          | \$150,243,565        | 36.0                      | 25.8                    | \$9.28                  |
| 1881 .....                            | 416,481,000       | 16,831,600          | 193,198,970          | 46.4                      | 24.7                    | 11.48                   |
| 1882 .....                            | 488,250,610       | 18,494,691          | 182,978,022          | 37.5                      | 26.4                    | 9.89                    |
| 1883 .....                            | 571,302,400       | 20,324,962          | 187,040,264          | 32.7                      | 28.1                    | 9.20                    |
| 1884 .....                            | 583,628,000       | 21,300,917          | 161,528,470          | 27.7                      | 27.4                    | 7.58                    |
| 1885 .....                            | 629,409,000       | 22,783,630          | 179,631,860          | 28.5                      | 27.6                    | 7.88                    |
| 1886 .....                            | 624,134,000       | 23,658,474          | 186,137,930          | 29.8                      | 26.4                    | 7.87                    |
| 1887 .....                            | 659,618,000       | 25,920,906          | 200,699,790          | 30.4                      | 25.4                    | 7.74                    |
| 1888 .....                            | 701,735,000       | 26,998,282          | 195,424,240          | 27.8                      | 26.0                    | 7.24                    |
| 1889 .....                            | 751,515,000       | 27,462,316          | 171,781,008          | 22.9                      | 27.4                    | 6.26                    |
| Total .....                           | 5,843,958,390     | 219,963,755         | 1,808,664,119        | -----                     | -----                   | -----                   |
| Average, 10 years, 1880 to 1889 ..... | 584,395,839       | 21,996,376          | 180,866,412          | 30.9                      | 26.6                    | 8.22                    |
| Average 10 years, 1870 to 1879 .....  | 314,441,178       | 11,076,822          | 111,075,223          | 35.3                      | 28.4                    | 10.03                   |
| 1890 .....                            | 523,621,000       | 26,431,369          | 222,048,486          | 42.4                      | 19.8                    | 8.40                    |
| 1891 .....                            | 738,394,000       | 25,581,861          | 232,312,267          | 31.5                      | 28.9                    | 9.08                    |
| Total .....                           | 1,262,015,000     | 52,013,230          | 454,360,753          | -----                     | -----                   | -----                   |
| Average, 2 years, 1890 to 1891 .....  | 631,007,500       | 26,006,615          | 227,180,377          | 36.0                      | 24.3                    | 8.74                    |



## FARM PRICES.

The December returns of our county correspondents relate to prices of the products of the year upon the farm or in the local markets where the surplus production is disposed of. Correspondents are instructed to return as nearly as possible a fair showing of the average price received by the growers for the different articles in question. In any comparison of these prices with commercial or export prices due allowance must be made for the fact that in commercial quotations the cost of intermediate charges between the farm and the consumer, together with profits of middlemen, are included. For the same reason export prices show considerably higher, including all charges between the farm and the port of shipment.

The returns of the present year are full of encouragement and gratification. The crops of the year, almost without exception, have been large, and naturally some reduction in price must be expected from the prices that prevailed a year ago, following the poor season of 1890. It is too often the case that the decline in values is greater in proportion than the increase in production, the surplus which is produced acting as a powerful factor in depressing the value of the whole crop. The extraordinary demand abroad for our grain this year and the increased consumption at home of other products, which in a measure take the place of those shipped abroad, has resulted in maintaining high values, and it is a source of gratification that the producing classes are realizing a handsome share in the increment.

CORN.—The corn crop of the present year exceeds 2,000,000,000 bushels, and closely approaches the largest crop ever grown in this or any other country. Last year the crop was the smallest in production per capita during ten years and the smallest in volume, with one exception, during the period. This deficiency in supply resulted naturally in a high price. The returns of the present year, however, make the average on the first day of the present month 40.6 cents, against 50.6 a year ago. With an increase in production of 500,000,000 bushels, or 34 per cent, the price has fallen 19 per cent. Values have been maintained by the unusual demand, both at home and abroad, for our product. On the basis of December prices, the present corn crop is worth to farmers nearly \$80,000,000 more than that of last year.

WHEAT.—Wheat shows still more strikingly the prosperous character of the season for American agriculture. With a crop this year more than 50 per cent larger than that of last, the price is not only maintained, but slightly exceeds that of a year ago. The present return makes the average value per bushel 83.9 cents, against 83.8 in December of 1890. The returns show that the advance in values has been uniform in all sections, and there is a remarkable uniformity of return even by counties. The present crop in the aggregate is worth to grow-



ers in the neighborhood of \$179,000,000 more than that of last year. The crop is, of course, largely beyond the requirements of home consumption, and only the fact that the market abroad for our surplus is much greater than ever heretofore prevents a heavy decline in value.

OATS.—In the case of oats, there has been a sharp decline from the abnormally high figures of a year ago. The price in December of last year was the highest, with one exception, during the decade, and was the result of the comparative failure of the crop over a large section of the area upon which it was grown. The price returned by this investigation is 31.5 cents per bushel, a price about the same as the average value during the period since 1880. The increase in production, however, more than offsets the decline in price, and the crop of the present year nets producers several million dollars in excess of what they received for the last.

OTHER CEREALS.—Like wheat, the price of rye is this year above that of last, the figures being 77.4 cents per bushel, against 62.9. The present crop is considerably larger than that grown last year, and prices have been maintained by the unusual demand for exportation to rye-eating countries, which have heretofore drawn their supplies from Russia and eastern Europe. The barley crop of last year was considerably smaller than the average for a series of years, on account of the generally unfavorable season. This year the crop is the largest ever grown, the increment resulting both from the large area planted in anticipation of the exclusion of Canadian barley from the market and from the unusually heavy yield per acre which was secured. As a result, the value per bushel of the crop is somewhat less than last year, the average for the country standing at 54 cents. The price of buckwheat at 57.9 is practically the same as last year, although there has been some increase in production.

POTATOES.—The potato crop in 1890 was very small, making the smallest supply per capita which we have had during any recent year. As a result, the average value per bushel was very high, but the short crop and inferior quality in most of the districts of large production prevented farmers from securing any of the advantages of the high prices. The present crop has been one of large proportions, the acreage having been increased and the season favorable in all districts where it is grown. As a result, there is a heavy decline in values. The present farm price is returned at 37.1. The result in the case of this crop shows what may usually be expected when crops in excess of ordinary demands are grown. With an increase this year of nearly 100,000,000 bushels in production, the aggregate value of the crop is less than that of last year by perhaps \$20,000,000. It is a fact, which our farming population must learn, that the surplus produced above requirements always acts powerfully in depressing the value of the whole crop. This small fraction is made to regulate the values for the aggregate product.



HAY AND TOBACCO.—Hay has shared with the other farm products the general rise of values, and the value per ton, as averaged for the whole country, stands at \$8.39, against \$7.74 last year. There is some improvement in the price of tobacco as a whole, the average for the total crop standing at 8.4, against 7.7 a year ago. The increase is largely for cigar leaf, which was most affected by the competition of Sumatra tobacco. Since the present customs law went into effect this competition has been reduced to a minimum, and as a result the value of all cigar leaf of native origin is considerably enhanced. The present investigation makes the value of the two kinds—cigar leaf, 14.1; manufacturing and export leaf, 7.5 cents per pound.

COTTON.—The cotton returns of December show average prices on plantations. The complaint of unremunerative values is general and the declaration frequent that the crop does not return cost of production. A feeling of discouragement pervades the report, and a disposition to reduce area is expressed. The plantation price, which is the actual rate for cotton sold at the gin, averages 7.3 cents per pound. For five years preceding the range was from 8.1 to 8.6, and averaged nearly 8.4 cents. This decline is echoed in the records of exportation, which averaged in October a value of 8.9 cents, against 10.11 cents for October of last year; a drop of 12 per cent. The State averages are as follows: Virginia, 7 cents; North Carolina, 7.4; South Carolina, 7.4; Georgia, 7.4; Florida, 7.3; Alabama, 7.3; Mississippi, 7.3; Louisiana, 7.3; Texas, 7; Arkansas, 7.3; Tennessee, 7.3.

An almost unexampled season for harvesting is reported, with picking, ginning, and marketing far advanced. While the fiber is at many points short, it is clean and of good color.

#### WINTER GRAIN.

The returns showing condition of the coming crops of winter grains are not generally favorable. On the Atlantic coast some injury is reported on early-sown areas from the Hessian fly. The season was not favorable for seeding in the South, on account of continued dry weather, and germination was slow from the same cause. Rains in the late autumn have improved the prospect.

In the Western States seeding was late, the seed bed hard and cloddy, germination slow, and growth feeble until November, when material improvement was seen in most fields. In some districts the Hessian fly made its appearance, causing some damage. The average of condition of the crop is 85.3, the figures for the principal States of the great wheat belt being: Ohio, 80; Michigan, 92; Indiana, 81; Illinois, 80; Iowa, 92; Missouri, 73; Kansas, 75; Nebraska, 93; California, 97. The average for New York is 97; Pennsylvania, 92; Maryland, 87; Virginia, 86; Georgia, 96; Texas, 70.

The condition of rye is a little higher than that of wheat, making an average of 88.8.



*Abstract of farm prices and condition of growing crops.*

| States and Territories. | Corn.—Average price per bushel. | Wheat.—Average price per bushel. | Rye.—Average price per bushel. | Oats.—Average price per bushel. | Barley.—Average price per bushel. | Buckwheat.—Average price per bushel. | Potatoes.                                    |                                                  | Leaf tobacco.—Average price per pound. | Hay.—Average price per ton. | Cotton.—Average price per pound. | Sorghum molasses.—Average price per gallon. | Winter wheat.—Average condition. | Winter rye.—Average condition. |
|-------------------------|---------------------------------|----------------------------------|--------------------------------|---------------------------------|-----------------------------------|--------------------------------------|----------------------------------------------|--------------------------------------------------|----------------------------------------|-----------------------------|----------------------------------|---------------------------------------------|----------------------------------|--------------------------------|
|                         | Cts.                            |                                  |                                | Cts.                            | Cts.                              | Cts.                                 | Solanum tuberosum.—Average price per bushel. | Batatas edulis, sweet.—Average price per bushel. |                                        |                             |                                  |                                             |                                  |                                |
| Maine                   | 80                              | \$1.10                           | \$0.97                         | 45                              | 72                                | 61                                   | 41                                           |                                                  |                                        | \$9.30                      |                                  |                                             |                                  |                                |
| New Hampshire           | 77                              | 1.15                             | .95                            | 46                              | 74                                | 67                                   | 45                                           |                                                  |                                        | 11.00                       |                                  |                                             |                                  |                                |
| Vermont                 | 76                              | 1.14                             | .90                            | 41                              | 72                                | 55                                   | 38                                           |                                                  |                                        | 9.00                        |                                  |                                             |                                  |                                |
| Massachusetts           | 78                              |                                  | .96                            | 47                              | 75                                | 70                                   | 54                                           |                                                  | 19.5                                   | 16.00                       |                                  |                                             |                                  |                                |
| Rhode Island            | 79                              |                                  | .97                            | 47                              | 78                                |                                      | 60                                           |                                                  |                                        | 16.25                       |                                  |                                             |                                  |                                |
| Connecticut             | 76                              | 1.06                             | .94                            | 45                              | 70                                | 77                                   | 55                                           |                                                  | 19.5                                   | 15.75                       |                                  |                                             | 99                               | 99                             |
| New York                | 66                              | 1.00                             | .88                            | 38                              | 65                                | 56                                   | 37                                           | 70                                               | 17.5                                   | 11.00                       |                                  |                                             | 97                               | 97                             |
| New Jersey              | 65                              | 1.04                             | .82                            | 40                              |                                   | 67                                   | 49                                           | 50                                               |                                        | 14.40                       |                                  |                                             | 95                               | 93                             |
| Pennsylvania            | 57                              | 1.00                             | .80                            | 37                              | 64                                | 57                                   | 43                                           | 89                                               | 14.5                                   | 10.00                       |                                  | 50                                          | 92                               | 93                             |
| Delaware                | 55                              | 1.00                             | .80                            | 39                              |                                   | 75                                   | 45                                           | 38                                               |                                        | 12.00                       |                                  | 40                                          | 95                               | 99                             |
| Maryland                | 53                              | 1.00                             | .88                            | 38                              |                                   | 70                                   | 48                                           | 53                                               | 6.7                                    | 11.15                       |                                  | 30                                          | 87                               | 91                             |
| Virginia                | 50                              | 1.00                             | .82                            | 41                              | 62                                | 65                                   | 47                                           | 42                                               | 7                                      | 11.00                       | 7.0                              | 41                                          | 86                               | 85                             |
| North Carolina          | 58                              | 1.02                             | .85                            | 51                              |                                   | 56                                   | 68                                           | 44                                               | 9.6                                    | 11.00                       | 7.4                              |                                             | 91                               | 92                             |
| South Carolina          | 70                              | 1.10                             | 1.07                           | 61                              |                                   |                                      | 82                                           | 48                                               |                                        | 12.18                       | 7.4                              | 41                                          | 98                               | 94                             |
| Georgia                 | 69                              | 1.10                             | 1.15                           | 60                              |                                   |                                      | 80                                           | 45                                               |                                        | 13.50                       | 7.4                              | 36                                          | 96                               | 75                             |
| Florida                 | 80                              |                                  |                                | 62                              |                                   |                                      | 90                                           | 46                                               |                                        | 15.00                       | 7.3                              | 40                                          |                                  |                                |
| Alabama                 | 63                              | 1.10                             | 1.12                           | 60                              |                                   |                                      | 78                                           | 47                                               |                                        | 12.38                       | 7.3                              | 47                                          | 95                               | 88                             |
| Mississippi             | 58                              | 1.00                             | .85                            | 58                              |                                   |                                      | 81                                           | 50                                               |                                        | 11.22                       | 7.3                              | 35                                          | 98                               | 90                             |
| Louisiana               | 60                              |                                  |                                | 52                              |                                   |                                      | 82                                           | 53                                               |                                        | 11.58                       | 7.3                              | 36                                          |                                  |                                |
| Texas                   | 55                              | .87                              | .80                            | 47                              | 78                                |                                      | 95                                           | 60                                               |                                        | 8.75                        | 7.0                              | 42                                          | 70                               | 73                             |
| Arkansas                | 46                              | .90                              | .88                            | 42                              |                                   |                                      | 64                                           | 50                                               | 7.0                                    | 10.57                       | 7.3                              | 38                                          | 85                               | 87                             |
| Tennessee               | 43                              | .93                              | .85                            | 40                              |                                   |                                      | 55                                           | 48                                               | 6.7                                    | 11.30                       | 7.3                              | 34                                          | 84                               | 83                             |
| West Virginia           | 52                              | .96                              | .76                            | 40                              |                                   | 60                                   | 42                                           | 60                                               | 8.0                                    | 9.17                        |                                  | 43                                          | 86                               | 85                             |
| Kentucky                | 40                              | .90                              | .83                            | 37                              |                                   |                                      | 45                                           | 55                                               | 7.3                                    | 10.15                       |                                  | 38                                          | 81                               | 84                             |
| Ohio                    | 41                              | .92                              | .85                            | 33                              | 60                                | 65                                   | 35                                           | 81                                               | 8.5                                    | 8.20                        |                                  | 41                                          | 80                               | 82                             |
| Michigan                | 48                              | .91                              | .78                            | 32                              | 60                                | 50                                   | 24                                           |                                                  |                                        | 11.00                       |                                  | 47                                          | 92                               | 95                             |
| Indiana                 | 38                              | .86                              | .78                            | 32                              | 59                                | 63                                   | 37                                           | 85                                               | 6.8                                    | 7.70                        |                                  | 41                                          | 81                               | 87                             |
| Illinois                | 37                              | .85                              | .77                            | 28                              | 55                                | 64                                   | 40                                           | 82                                               | 7.2                                    | 7.72                        |                                  | 42                                          | 80                               | 85                             |
| Wisconsin               | 44                              | .84                              | .78                            | 28                              | 55                                | 53                                   | 26                                           |                                                  | 8.7                                    | 9.80                        |                                  | 48                                          | 89                               | 86                             |
| Minnesota               | 39                              | .78                              | .68                            | 27                              | 43                                | 56                                   | 24                                           |                                                  |                                        | 5.75                        |                                  | 50                                          |                                  |                                |
| Iowa                    | 30                              | .81                              | .67                            | 26                              | 42                                | 60                                   | 22                                           | 79                                               |                                        | 5.50                        |                                  | 43                                          | 92                               | 93                             |
| Missouri                | 38                              | .80                              | .73                            | 29                              | 57                                | 75                                   | 35                                           | 65                                               | 7.5                                    | 6.20                        |                                  | 36                                          | 73                               | 76                             |
| Kansas                  | 34                              | .73                              | .64                            | 27                              | 40                                | 70                                   | 35                                           | 70                                               |                                        | 3.62                        |                                  | 41                                          | 75                               | 82                             |
| Nebraska                | 26                              | .73                              | .60                            | 23                              | 37                                | 58                                   | 28                                           | 75                                               |                                        | 3.17                        |                                  | 44                                          | 93                               | 95                             |
| California              | 71                              | .95                              | .90                            | 60                              | 61                                |                                      | 54                                           | 76                                               |                                        | 11.00                       |                                  |                                             | 97                               | 97                             |
| Oregon                  | 71                              | .88                              | .80                            | 41                              | 48                                | 81                                   | 40                                           |                                                  |                                        | 8.00                        |                                  |                                             | 98                               | 98                             |
| Nevada                  |                                 | .87                              |                                |                                 | 75                                |                                      | 50                                           |                                                  |                                        | 5.00                        |                                  |                                             |                                  |                                |
| Colorado                | 53                              | .73                              | .62                            | 38                              | 56                                | 80                                   | 28                                           |                                                  |                                        | 8.00                        |                                  |                                             |                                  |                                |
| Arizona                 |                                 | .75                              |                                |                                 | 70                                |                                      | 50                                           |                                                  |                                        |                             |                                  |                                             |                                  |                                |
| North Dakota            | 40                              | .70                              | .65                            | 26                              | 42                                |                                      | 20                                           |                                                  |                                        | 4.00                        |                                  |                                             |                                  |                                |
| South Dakota            | 35                              | .72                              | .60                            | 25                              | 41                                | 60                                   | 28                                           |                                                  |                                        | 4.20                        |                                  |                                             |                                  |                                |
| Idaho                   |                                 | .84                              | .75                            | 50                              | 68                                |                                      | 40                                           |                                                  |                                        | 6.67                        |                                  |                                             |                                  |                                |
| Montana                 |                                 | .84                              | .90                            | 48                              | 65                                |                                      | 41                                           |                                                  |                                        | 8.50                        |                                  |                                             |                                  |                                |
| New Mexico              | 72                              | .82                              |                                | 55                              | 70                                |                                      | 63                                           | 90                                               |                                        | 9.50                        |                                  |                                             |                                  |                                |
| Utah                    | 60                              | .75                              | .64                            | 42                              | 60                                |                                      | 25                                           |                                                  |                                        | 5.50                        |                                  |                                             | 90                               | 95                             |
| Washington              |                                 | .75                              | .82                            | 41                              | 60                                |                                      | 38                                           |                                                  |                                        | 10.50                       |                                  |                                             | 95                               | 96                             |
| Wyoming                 |                                 | .82                              | .80                            |                                 | 70                                | 83                                   | 43                                           |                                                  |                                        | 9.00                        |                                  |                                             |                                  |                                |
| General average.        | 40.6                            | 83.9                             | 77.4                           | 31.5                            | 54                                | 57.9                                 | 37.1                                         |                                                  | 8.4                                    | 8.39                        | 7.3                              |                                             | 85.3                             | 88.8                           |



## DISTRIBUTION OF SPRING AND WINTER WHEAT.

The distribution of spring and winter wheat is generally governed by climatic limitations, either from latitude or altitude. Spring wheat, as a rule, is grown where the severity of the winter is such as to preclude or render doubtful the growing of the fall-sown crop. There are, however, other factors than climatic disability which affect the distribution, but in a less general way. In districts which can grow both varieties a severe winter, resulting in the winter killing of a portion of the fall seeding, may largely increase the area sown in the following spring, but an unusual loss from attacks of chinch bugs or other insects upon spring grain may equally result in an enlargement of the winter area. There is no definite line of demarcation absolutely separating the two varieties. On the contrary, there is a belt of greater or less width in which both or either may be grown, and this neutral belt in a manner gives flexibility to our crop. When spring opens, the condition of the winter crop can be known, the prospect for the world's crop and consequent demand for grain calculated, and the area of spring grain increased or diminished as the occasion may justify in the districts growing both varieties.

In point of area suitable for its cultivation winter wheat largely exceeds the spring grain, the whole country south of the more northern belt where severe and long winters are experienced, being theoretically, so far as climate is concerned, suited for the cultivation of winter wheat. This area, however, includes all that portion of the country enjoying a semi-tropical climate, in which wheat is not a crop of any practical importance. The best wheat-producing districts are those toward the northern limit of its habitat, the yield being, as a rule, heavier and the grain better when produced where the season for growth and maturity is short. This fact acts to narrow the winter-wheat district, but with this limitation the area suitable for practicing fall sowing is still much larger than that in which spring seeding is a necessity.

The comparative area of the total crop devoted to each species is not a fixed quantity. In addition to the reasons for fluctuations already noticed, there are other elements which govern the comparative areas of each variety. Spring wheat has always been what might be called a pioneer crop in those portions of the Northwest where either variety might be grown. The district opened up to settlement is known, from its latitude and general conditions, to be suitable for spring wheat, while the planting of winter wheat would be something in the nature of an experiment. Pioneers making their battle to subdue the forces of nature, while establishing homes, do not risk experiments. What is certain is sufficient, and the crops grown in the early history of the district are spring grain. With increasing settlement and more accurate



knowledge of the normal climate of the district, together with the natural changes in methods of agriculture followed, experiments in winter-wheat culture may determine that fall sowing is productive of best results. This change is more likely to occur from spring to winter than from winter to spring grain, from the fact that fall seeding is generally preferred where the conditions are equally favorable for each practice.

For the purpose of determining as definitely as possible the exact present distribution, an investigation was recently undertaken which covered every county in the neutral district and outside of that area every county of any importance in wheat growing. The investigation was intended to supplement the results of one made a few years ago, by showing the changes in comparative distribution which have taken place during recent years. The present inquiry develops considerable local fluctuation, but the average proportion of each in the aggregate shows surprisingly little change. Upon the basis of the facts developed by the previous investigation, the average proportion of the total area devoted to spring wheat during the past five years, as estimated by this Department, has been 35 per cent and of winter wheat 65 per cent. The present inquiry related to the crop of 1891, the largest crop in aggregate volume ever grown, and the result indicates that 66 per cent of the product was winter wheat and 34 per cent spring.

The division by States is as follows:

| States.             | Winter. | Spring. | States.           | Winter. | Spring. |
|---------------------|---------|---------|-------------------|---------|---------|
| Maine.....          |         | 100     | Illinois.....     | 97      | 3       |
| New Hampshire.....  | 5       | 95      | Wisconsin.....    | 56.7    | 43.3    |
| Vermont.....        | 9       | 91      | Minnesota.....    | 3.3     | 96.7    |
| Connecticut.....    | 99      | 1       | Iowa.....         | 17.3    | 82.7    |
| New York.....       | 80      | 20      | Missouri.....     | 100     |         |
| New Jersey.....     | 100     |         | Kansas.....       | 92.7    | 7.3     |
| Pennsylvania.....   | 97.7    | 2.3     | Nebraska.....     | 16.5    | 83.5    |
| Delaware.....       | 100     |         | California.....   | 97.4    | 2.6     |
| Maryland.....       | 100     |         | Oregon.....       | 44.5    | 55.5    |
| Virginia.....       | 100     |         | Nevada.....       | 18.7    | 81.3    |
| North Carolina..... | 100     |         | Colorado.....     | 11.2    | 88.8    |
| South Carolina..... | 100     |         | Arizona.....      | 88      | 12      |
| Georgia.....        | 100     |         | North Dakota..... |         | 100     |
| Alabama.....        | 100     |         | South Dakota..... |         | 100     |
| Mississippi.....    | 100     |         | Idaho.....        | 6.2     | 93.8    |
| Texas.....          | 100     |         | Montana.....      | 1.7     | 98.3    |
| Arkansas.....       | 100     |         | New Mexico.....   | 3.9     | 96.1    |
| Tennessee.....      | 100     |         | Utah.....         | 25.8    | 74.2    |
| West Virginia.....  | 100     |         | Washington.....   | 46.1    | 53.9    |
| Kentucky.....       | 100     |         | Wyoming.....      |         | 100     |
| Ohio.....           | 100     |         |                   |         |         |
| Michigan.....       | 97.5    | 2.5     | Average.....      | 66      | 34      |
| Indiana.....        | 100     |         |                   |         |         |

An examination of this table shows that the spring wheat district comprises New England except Connecticut, northern New York, northern Michigan, and Illinois, northern and eastern Wisconsin, Minnesota, all except the southern tier of counties in Iowa, all except a narrow belt in Nebraska, and about half the area in Oregon and Washington. In the Rocky Mountain region, on account of the elevation, spring wheat is the standard, but the aggregate product is small.



The most marked changes in distribution are in Wisconsin and Iowa, where there is a distinct trend toward winter grain, and in Oregon and Washington, where, after the previous investigation, there was an increase in the proportion of spring, but where there is now a tendency toward a return to fall sowing. The reasons assigned for the reaction toward winter wheat are generally a better appreciation of the possibilities of the climate, showing that it is suitable for fall sowing, and to the greater immunity of winter grain from the ravages of the chinch bug. The principal change is in Wisconsin, and a study of the map of this State shows that the incursion of winter wheat has been upon regular and well-marked lines.

A diagram showing the location of winter wheat by counties in this State and in Iowa has been prepared and is presented. In Wisconsin the area begins in the western portion of the State and shades gradually away toward the east. The purely spring-wheat district is now a fringe around the northern and eastern portion of the State, the section suffering most from severity of the winters, either on account of more northern latitude or exposure to the lake winds. In Iowa the change, while less marked, still continues, the breadth of winter grain growing broader year by year as farmers feel their way toward its successful cultivation. Some years ago wheat growing sensibly declined in this State, and in the revival which has taken place winter wheat has been gradually substituted in some sections, especially along the southern and eastern tier of counties.

In the diagrams the shaded portions represent the districts growing winter wheat, the heaviest shading showing the counties in which more than half is winter grain, the second degree those having from 30 to 50 per cent, the third 10 to 30 per cent, while the uncolored counties represent exclusively spring wheat.

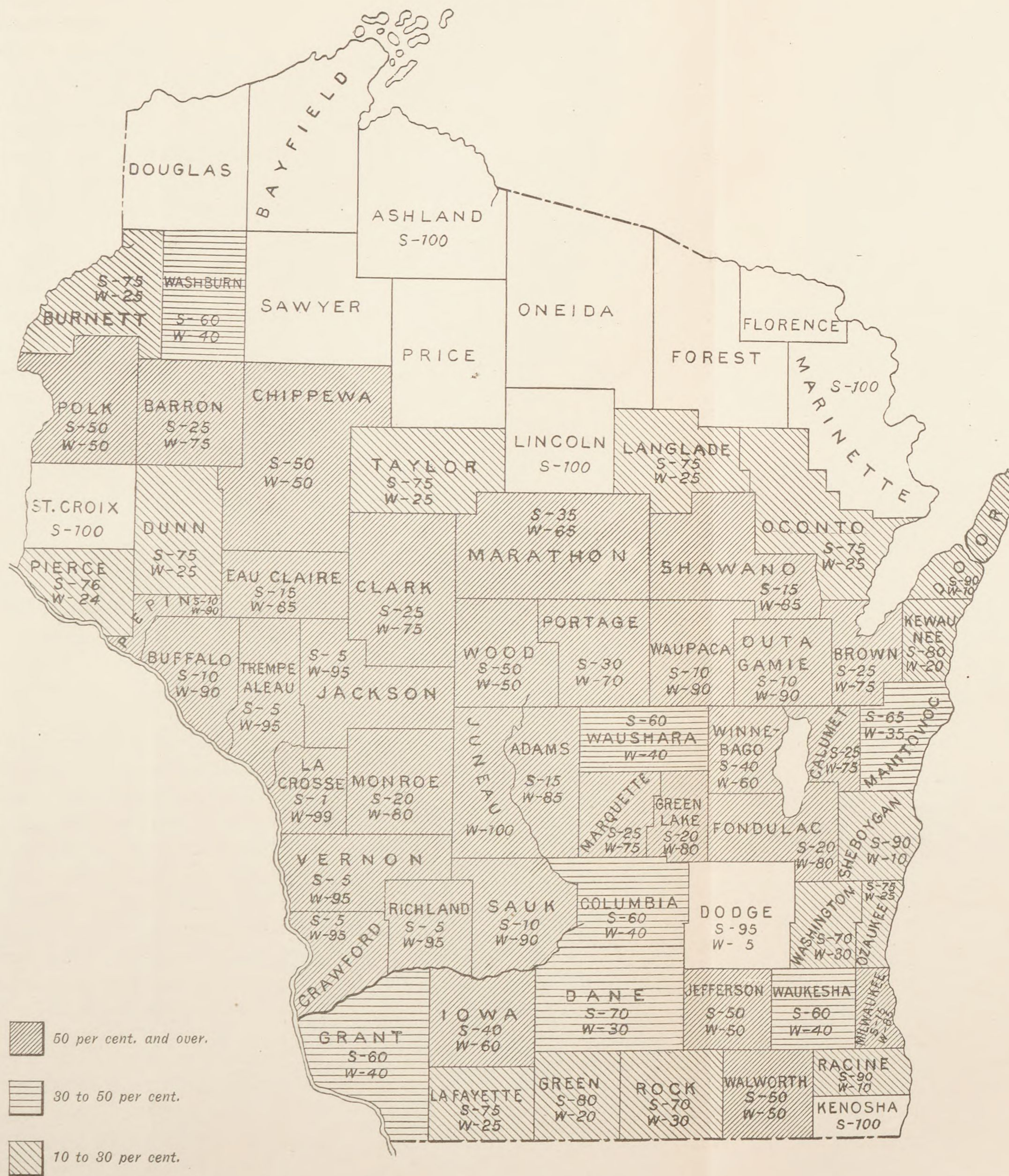
In California the only spring wheat grown is the little produced at high elevations among the mountains, and especially in the northern part of the State. In Oregon and Washington winter wheat was first grown, but as settlement increased the tendency was toward spring grain, and for a time a very large proportion of the crop was of this variety. A reaction now appears to have set in, and the superior results, where summer fallowing and fall sowing are practiced, have given a decided impetus to the production of winter wheat. More than half of the grain of the two States is spring wheat, however, and the elevation of some of the wheat-growing areas, together with other climatic limitations, will necessarily make a considerable portion of the crop always of that variety.

A line drawn upon the map of the country to separate in a general way the spring and winter wheat districts would pass through southern New England and northern New York, with a southern curve to include the elevations of the Adirondack, then passing across the lakes and through the upper portion of the Michigan peninsula and Wisconsin.

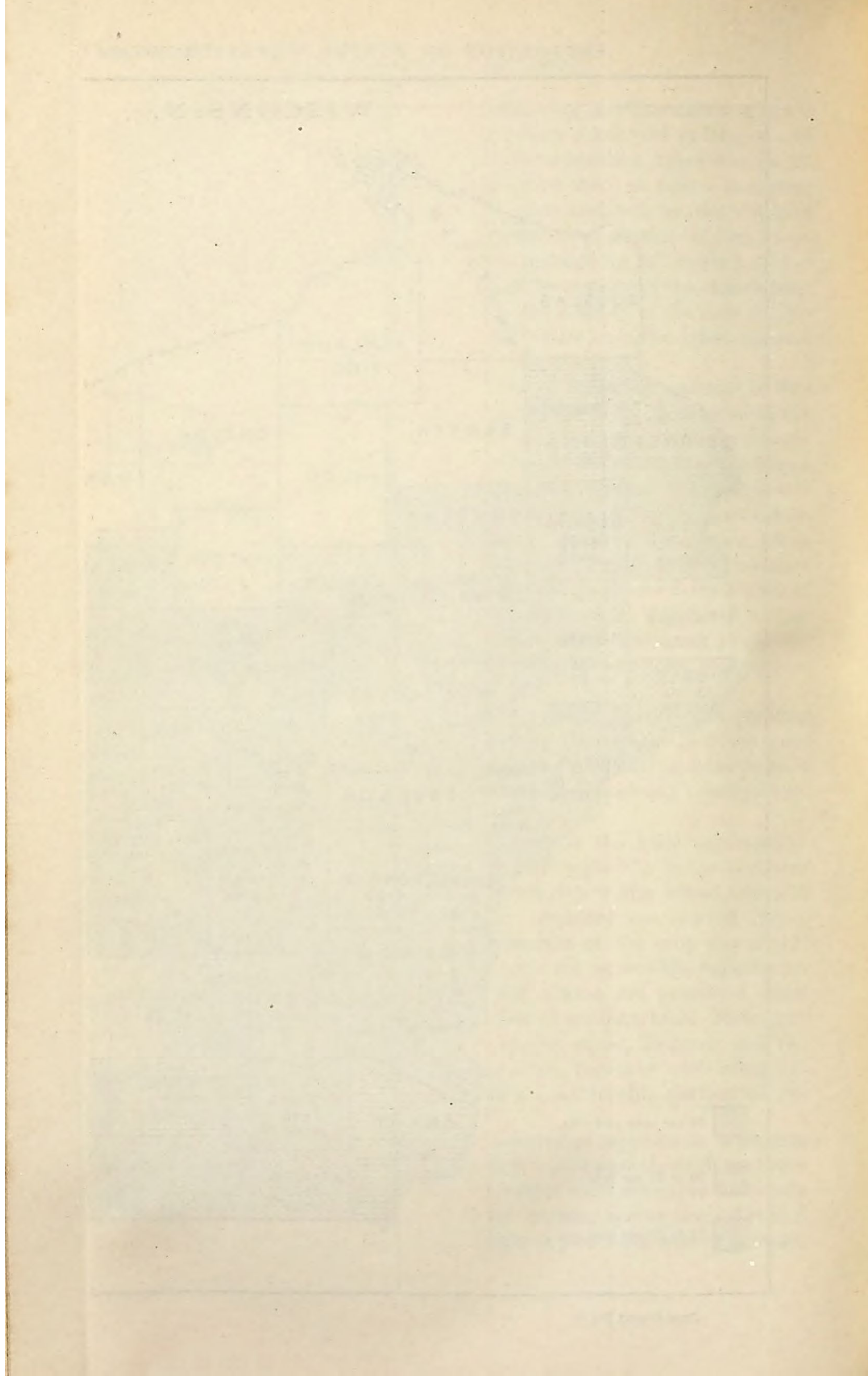


PROPORTION OF WINTER WHEAT TO TOTAL WHEAT AREA.

WISCONSIN.



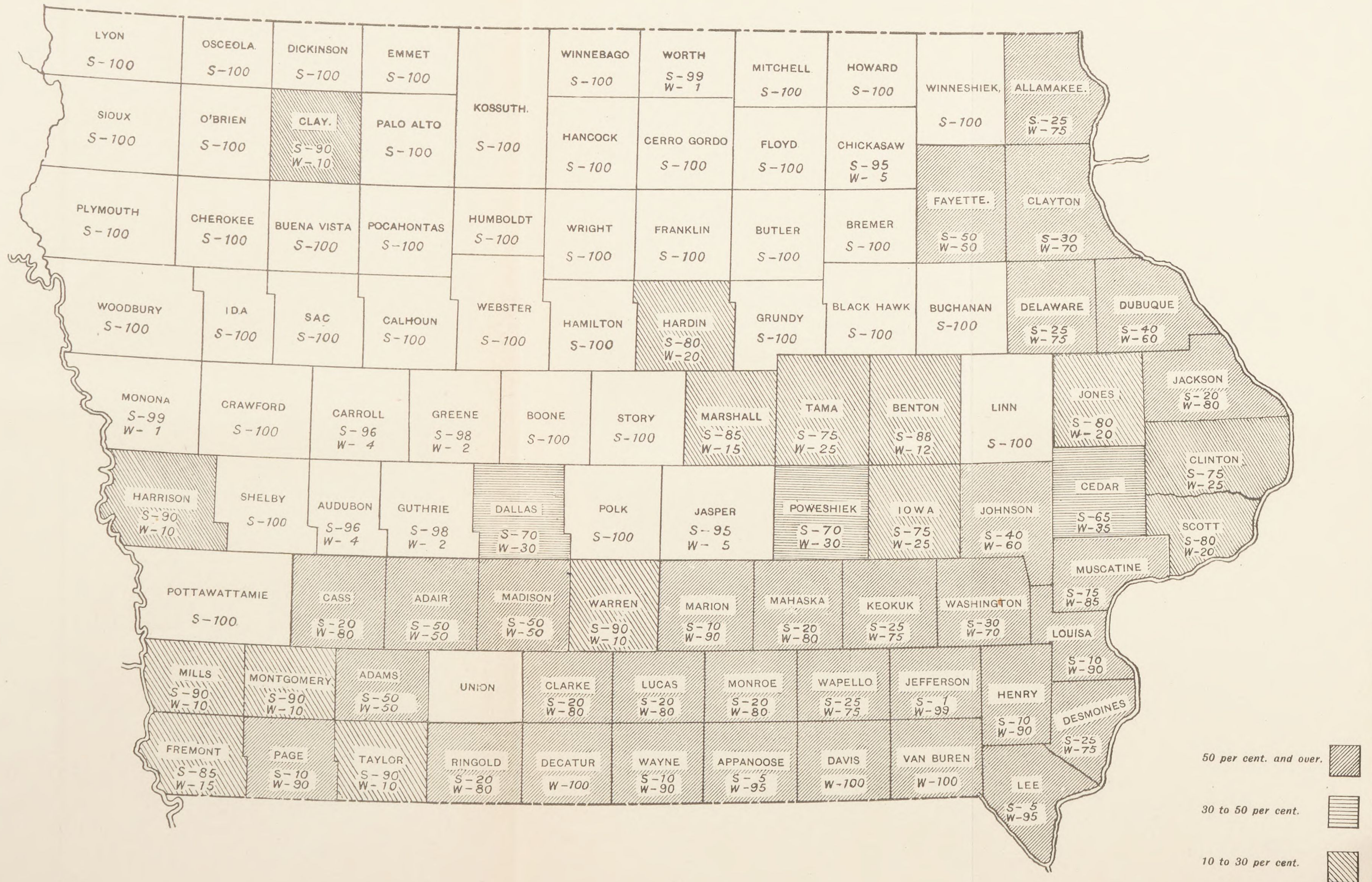




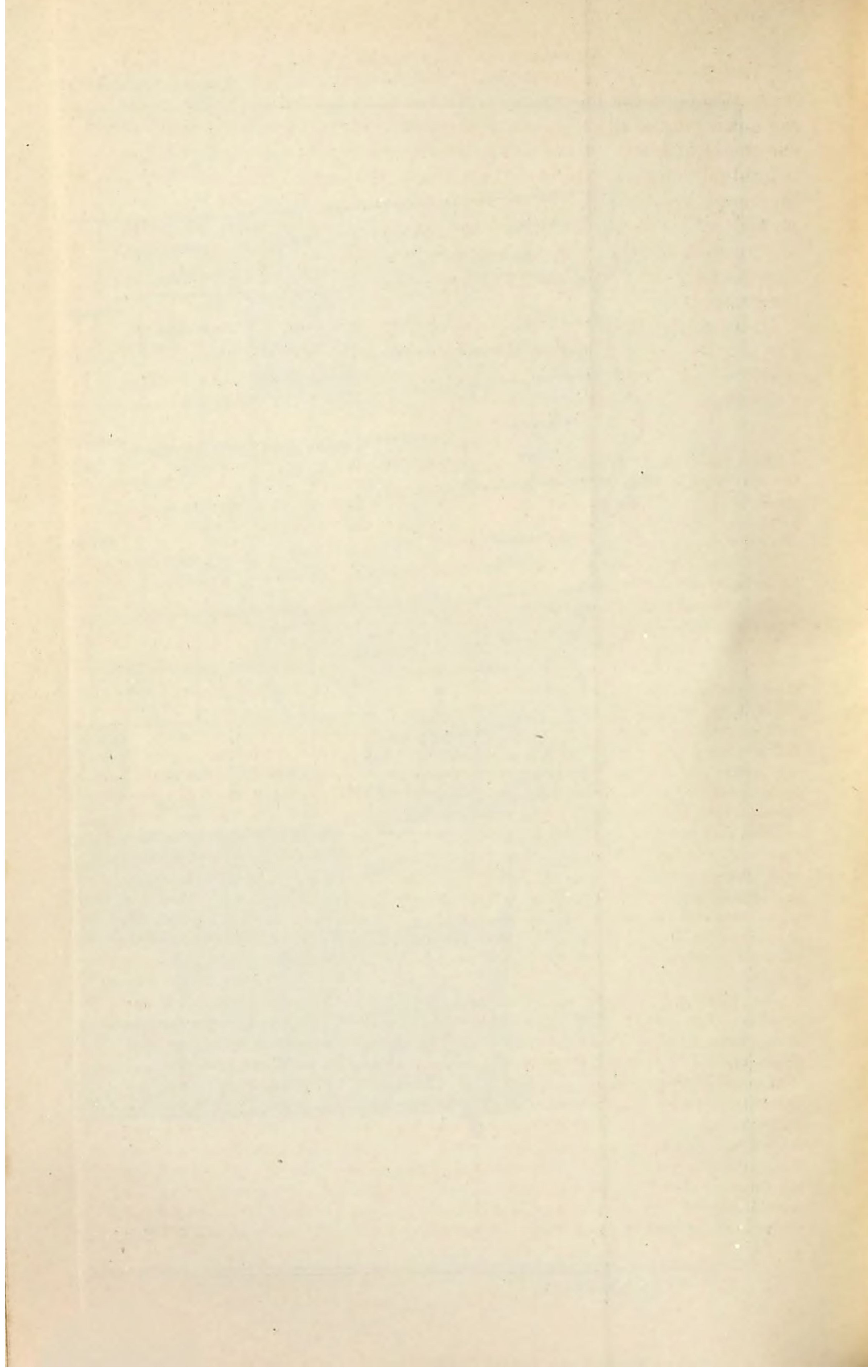


PROPORTION OF WINTER WHEAT TO TOTAL WHEAT AREA.

IOWA.









From this point the line makes a sudden bend toward the south, passing down west of the Mississippi River until it reaches a point south of the center of Iowa. From this point the westward course of the line is gradually deflected toward the south as the elevations of the Rocky Mountain system are approached. The range is crossed in New Mexico and a deflection toward the north begins as lower altitudes are reached, the line passing near Salt Lake City, crossing the Sierra Nevada range in northern California and first reaching the ocean on the Oregon coast.

In connection with the change toward winter wheat which is taking place in Iowa, the following communication from Mr. Henry Wallace, editor of the Iowa Homestead, and a recognized authority on such matters, will be of interest and value:

DES MOINES, IOWA, *November 3, 1891.*

DEAR SIR: The extension of winter wheat in Iowa has been very considerable in the past year, mainly in the southern part of the State, but to some extent in the northern part as well. It seems to follow clover culture. A good deal has been drilled in between the rows of standing corn, and this has some advantages and some disadvantages. The advantages are—

(1) Cheapness of cultivation, nothing more being necessary than drilling the grain between the stalks with a one-horse drill.

(2) It has also the advantage of gathering snow during the winter season, and thus securing better protection.

The disadvantages are—

(1) That it is impossible to pasture the stalks without injuring the wheat, unless it be done when the ground is frozen solid, which is only in quite cold weather.

(2) It leaves the surface too rough either for cutting the crop economically or for sowing grass seed with a view to use as a meadow. I sowed a field this way last fall and found these disadvantages. On the other hand, I found that the sowing of clover was entirely unnecessary in the spring, as the seed that was left in the ground came up of its own accord and made an exceedingly rank growth without the sowing of a spoonful, the land having been in clover before corn. Now that corn-cutting machines are coming into use, I think there will be a modification of the method that will do away with some of these disadvantages, and that in the future farmers who wish to sow seed on corn ground will cut the corn in very wide rows of shocks, say four hills by thirty, and thus obviate the difficulty of lodged corn. They can then harrow the ground somewhat smooth if they think best, and drill in, the corn stubble remaining affording some protection, although not as much as the stalks. This will obviate the necessity of pasturing stalks and thus remove another objection.

The objection to drilling wheat on clover land is this, that it is difficult where there is a rank growth of clover, as is usually the case in this State, in getting the soil sufficiently compacted. Our soil is very loose, and I found two years ago that eight successive harrowings and rollings failed to get the solid and firm seed bed that is necessary for success in growing winter wheat. Again, the heavy growth of clover turned over and not yet decomposed holds more or less water, and the freezing and thawing makes the wheat more liable to heave out. I experimented last year with a field of 20 acres that had been in clover, then corn, then oats, plowing under the stubble and drilling in about the 20th of September. I then gave part of it a top dressing of well-rotted manure spread very thinly upon the ground during the winter months. The very furrow to which this dressing extended could be seen as far as the field could be seen from spring to harvest time, and while no account was



kept of the crop, I have no doubt it was much larger; in fact the only danger to this crop was from the exceedingly rank growth.

Iowa farmers are but feeling their way to the production of winter wheat, but I have no doubt but that the most of it will be sown in the future, either on corn cut off as I have indicated, by the machines now in use, which are very simple in their construction, or else on oats or spring wheat stubble following corn, making the rotation clover, corn, oats, or spring wheat winter wheat, and then back to clover. In whatever way it is sown the ground should be neither too wet nor too dry at seeding time, should be well pulverized and firm, so as to have a solid bed at the bottom with no pockets or loose places in the soil.

### COTTON IMPORTS OF THE UNITED STATES.

The present commanding position of this country in the production of cotton has existed only since the invention and practical introduction of Eli Whitney's cotton gin. Prior to the successful use of machinery for the purpose of separating lint from seed, the production of cotton in the United States was insignificant, and it was not believed that we had advantages of soil and climate which would make us a great cotton-growing country. From our earliest foreign trade we have imported cotton each year, and prior to the general use of the gin our imports were considerably larger than our foreign shipments. A little cotton, said to have been of American origin, reached the markets of the world earlier than 1785, but there is little doubt but that a considerable portion of it was made up of West Indies cotton, reexported.

The tariff act of 1789, the first passed by the Government, placed raw cotton upon the free list, but the acts of 1790 and 1791 imposed a duty of 3 cents per pound. In his famous report upon manufactures Secretary Hamilton argued for the repeal of this duty upon the ground that it was never likely to successfully build up a cotton-growing industry in this country, but that its effect was to retard the development of cotton manufacturing. The view then was that our cotton supply must come from abroad, and that revenue had better be raised upon imports of products with which we might compete in production. In lieu of the duty he proposed a system of bounties for cotton of domestic growth. Three years after this report was written the gin was perfected and the cotton production and trade of the world revolutionized. Instead of being an importing country we at once took first rank as a producing country, and have since maintained this position. At the present time, according to the most reliable estimates, we produce more than half of all fiber grown in the world, including that produced among people having no trade relations with civilized countries, and, what is more important, we produce 75 per cent of all which enters into commercial channels.

From our earliest history, however, we have imported cotton to some extent; while this trade is insignificant, as compared with our foreign shipments of domestic product, it in itself forms a considerable item in



our annual imports. In 1792 we practically imported all of the cotton which was used in our manufactures at that early date, the volume for that year amounting to 2,531,743 pounds. During the next ten years we became a great exporting country, and the character of our purchases of foreign cotton underwent a complete change. The great bulk of our own cotton is of the upland or short-stapled variety, with a comparatively small proportion of sea-island, or long-staple cotton, grown in limited areas and used for special purposes. Between these two classes of our product there is a wide difference, and there is a demand for a staple whose characteristics shall differ from both.

Our official trade records show that during the ten years, from 1880 to 1889 inclusive, our imports of raw cotton ranged from 4,000,000 to 8,000,000 pounds, with a valuation running from 13½ to 20 cents per pound. During the period of our civil war, when our domestic supply was practically cut off, and we were forced to import cotton of all varieties for general use, our trade reached quite large proportions, the yearly importations ranging from 26,000,000 to 36,000,000 pounds, but with the close of the hostilities, and the opening again of our cotton fields with free labor, demands for domestic consumption were again supplied with the domestic product.

The preliminary returns for our trade during 1891 show a very heavy increase in this importation, marking it as the largest ever recorded during the history of our trade outside of the four years of war. Until the complete records are available it is impossible to analyze the trade of the past year or to understand the requirements which have led to so large an increase.

Our purchases of cotton are made very largely from the United Kingdom. From Egypt we purchase directly each year a considerable portion of our supply, and the cotton which comes by way of England is largely Egyptian, in fact, practically all of the cotton we buy comes originally either from Egypt or from Peru and Brazil. In the following table a showing is made of our imports of cotton since 1880, together with the value each year and the average price per pound:

| Years.    | Pounds.   | Value.    | Value<br>per<br>pound. | Years.    | Pounds.    | Value.    | Value<br>per<br>pound. |
|-----------|-----------|-----------|------------------------|-----------|------------|-----------|------------------------|
|           |           |           | <i>Cents.</i>          |           |            |           | <i>Cents.</i>          |
| 1880..... | 3,547,792 | \$591,120 | 16.7                   | 1886..... | 5,072,334  | \$672,508 | 13.3                   |
| 1881..... | 4,449,866 | 757,308   | 17.0                   | 1887..... | 3,924,531  | 533,928   | 13.6                   |
| 1882..... | 4,339,952 | 789,844   | 18.2                   | 1888..... | 5,497,592  | 744,800   | 13.5                   |
| 1883..... | 4,081,945 | 800,532   | 20.0                   | 1889..... | 7,973,039  | 1,194,505 | 15.0                   |
| 1884..... | 7,019,492 | 1,379,850 | 19.7                   | 1890..... | 8,606,049  | 1,392,728 | 16.2                   |
| 1885..... | 5,115,680 | 954,760   | 18.7                   | 1891..... | 20,908,817 | 2,825,004 | 13.5                   |

Much the larger proportion of the imports shown in above table are made up of Egyptian cotton. Peruvian cotton, either from Peru or Brazil, is second in importance, and in addition small quantities are received from China, the East Indies, and other miscellaneous sources.



The amount which is received outside of Egyptian and Peruvian, however, is of little importance. The peculiar characteristics of these two cottons are very different.

The peculiarity of the Egyptian fiber is its smoothness, brilliancy of color, luster, and silky nature of the staple. It is used mostly in the manufacture of fine hosiery, balbriggan, etc., and fine fabrics by itself, and also in mixtures for fabrics composed partly of silk and wool, in great variety. The staple is long and fine, but in these qualities does not equal our home-grown sea-island cotton. This home product is undoubtedly the finest staple grown in any portion of the world, and is used principally in the manufacture of thread, fine lace, embroidery, and choice dress fabrics. For use where particularly fine quality of cotton is necessary it has no competitor. The Egyptian fiber, it is claimed, receives and retains in original brilliancy the different dyes used more readily than any other grade.

The Peruvian cotton is the product of the so-called cotton-tree, growing upon plants or small trees from 8 to 12 feet in height. The peculiarity of its fiber is almost the opposite of the characteristics of the Egyptian. Where the latter approaches silk the Peruvian cotton might be compared with wool; in fact, it is sometimes called wool cotton. On account of the fleeciness of its staple it is generally used in mixtures with wool, especially for rough fabrics, and for certain classes of hosiery and knit goods.

It would seem that this country, with its unrivaled conditions for the production of cotton, might be able to produce every quality of fiber demanded by our manufacturers for use in any class of goods. There are, of course, peculiar climatic conditions surrounding the cultivation of cotton in Egypt and in South America, but it would seem that with our extent of territory, approaching as near tropical climate as we do, some area might be found for the production of both or either.

### THE CANNING INDUSTRY.

The extension of the canning industry has been very rapid during a comparatively recent period. In the beginning the industry covered but a very narrow range of products, and the goods were generally looked upon with more or less disfavor. Good housewives made it always a point to prepare for their own use a supply of fruits and berries preserved in sugar or by cooking slightly and placing in air-tight receptacles. This home effort to enlarge the table supply with appetizing delicacies outside of the regular fruit and berry season was practically the beginning of the present canning industry, so far as regards the preparation and preservation of fruits and similar condiments. In occasional households, where the presiding genius was especially noted for thrift and enterprise, a small line of vegetables was prepared by



air-tight sealing in a similar manner, but this was mainly limited to the tomato.

The people of this country probably enjoy a wider dietary than those of any other nation in the world, and to supply the needs, necessities, and even whims of appetite, there is a constant striving on the part of those engaged in the different branches of the canning industry to attain superiority of product, novelty of preparation, and general excellence, combined with reasonable cheapness of result. The industry now covers a very wide range, including products of the soil, of the sea, and of the river. The principal vegetables which form an important part of the national ration, including tomatoes, beans, peas, corn, etc., are preserved for use outside of the season of regular growth, and are found upon the shelves of almost every grocery store in the country, contributing very largely to the supply of the typical American table. From the sea we have small fish, shrimps, sardines, etc., and various forms of the crustacea, while our rivers of the far Northwest, and our Alaskan possessions, give a very desirable addition to our food supply in their salmon. Another important branch of the industry is the preparation of cooked meats, which has become, perhaps so far as money value is concerned, the most important line of canned products.

#### CORN.

The roasting ear, the green corn upon the cob, has been recognized as a standard article of food during the season in which it may be obtained, in this country at least, since it was first introduced to the notice of the original settlers. It is only within comparatively recent years, however, that successful methods have been followed in preparing it for use outside of its ordinary period of growth. This branch of the industry is now a very large one, and factories are to be found in very many sections of the country where the sweet varieties of maize are grown. The principal packing districts are in Maine, New York, and the Atlantic coast as far South as Virginia, although in the central West, where the surplus corn which supplies commercial demand is grown, it is rapidly assuming importance. The reputation of this class of our canned-goods product is attested by the steady and rapid increase of the amount consumed by our own people. Americans are very particular, not to say fastidious, in their diet, and the popular taste for delicacies and preparations of standard articles of food requires intelligent and progressive study of methods by packers that insures constant elevation of the standard of quality. A careful investigation of methods used by canners shows that they are prompt to accept all the latest improvements which tend to a betterment of product, and that there is a constant striving to attain perfection in quality and methods of packing goods.

The *American Grocer*, of New York, from returns made to it by  
14701—No. 91—3



canners and packing houses in all sections of the country, presents each year a statement showing the pack of the season. The packs for the years 1890-'91 are thus presented:

|                              | 1891.         | 1890.         |                        | 1891.         | 1890.         |
|------------------------------|---------------|---------------|------------------------|---------------|---------------|
|                              | <i>Cases.</i> | <i>Cases.</i> |                        | <i>Cases.</i> | <i>Cases.</i> |
| Maine.....                   | 614,894       | 503,939       | Delaware.....          | 40,000        | .....         |
| Maryland and Virginia...     | 461,240       | 260,308       | New Jersey .....       | 27,000        | 3,700         |
| New York.....                | 536,814       | 305,691       | Michigan.....          | 12,140        | 4,000         |
| Illinois and Indiana.....    | 476,735       | 225,198       | Kansas.....            | 11,800        | 3,967         |
| Iowa.....                    | 213,001       | 108,493       | Massachusetts .....    | 11,000        | 9,700         |
| Ohio.....                    | 194,800       | 80,700        | Missouri.....          | 9,720         | 2,500         |
| Nebraska.....                | 81,750        | 10,925        | All other States ..... | 96,559        | 28,475        |
| Pennsylvania.....            | 49,700        | .....         |                        |               |               |
| Canada (partly estimated)... | 52,000        | 41,264        | Total.....             | 2,799,453     | 1,588,860     |

For purpose of comparison with the aggregate results of the operations of previous years the following statements, showing the detailed pack by years from 1885 to 1891, inclusive, is presented:

| Year.     | Total pack. | Year.     | Total pack. |
|-----------|-------------|-----------|-------------|
| 1891..... | 2,799,453   | 1887..... | 2,311,424   |
| 1890..... | 1,588,860   | 1886..... | 1,704,735   |
| 1889..... | 1,760,300   | 1885..... | 1,082,174   |
| 1888..... | 3,491,474   |           |             |

An examination of the above table shows that the pack of the year just past was, with one exception, the largest in the history of the trade, being exceeded only by that of 1888. The season opened with conditions exceedingly favorable for those interested in the industry. The stocks of old corn on hand were very much reduced, and prices had advanced to such a point as to give a very fair return for the goods when placed upon the market. The trade during the season was brisk, consumption evidently kept very nearly pace with production, and the season closed with but small stocks in original hands, leaving the way clear for another favorable year.

#### TOMATOES.

The same authority presents similar detailed estimates of the tomato pack. From the report for 1891 it appears that the pack of last year was the largest on record, but that it exceeded the pack of 1890 but little, and that the annual product is so nearly stationary that it is only 263,000 cases above the average pack of the four years previous. New Jersey leads in production, the present season showing an increase of 16 per cent. over that of the previous year. Maryland stands second, but shows a product considerably smaller than that of 1890. This is explained by the fact that in Harford County, where the greater number of canneries are located, the crop was very poor and many factories



did not go into active operation. The pack by States, in cases of two dozen tins each, is thus presented for the years 1890 and 1891:

|                  | 1891.    | 1890.    |                      | 1891.       | 1890.       |
|------------------|----------|----------|----------------------|-------------|-------------|
| New Jersey ..... | 950, 833 | 815, 485 | Nebraska .....       | 26, 900     | 5, 670      |
| Maryland .....   | 744, 010 | 949, 157 | Pennsylvania .....   | 15, 000     | 21, 285     |
| Indiana .....    | 341, 217 | 243, 920 | Connecticut .....    | 14, 400     | 15, 500     |
| Delaware .....   | 264, 950 | 230, 025 | Colorado .....       | 12, 600     | 4, 500      |
| California ..... | 218, 311 | 222, 173 | Massachusetts .....  | 10, 000     | 18, 000     |
| New York .....   | 114, 774 | 101, 952 | Kentucky .....       | 10, 000     | 14, 972     |
| Virginia .....   | 98, 360  | 95, 694  | Arkansas .....       | 14, 500     | 20, 000     |
| Iowa .....       | 94, 800  | 98, 904  | Tennessee .....      | 6, 840      | 1, 910      |
| Ohio .....       | 90, 590  | 75, 060  | Texas .....          | 4, 500      | 10, 850     |
| Missouri .....   | 90, 350  | 28, 400  | North Carolina ..... | 3, 900      | 3, 150      |
| Canada .....     | 83, 000  | 73, 246  | Georgia .....        | 3, 000      | 3, 000      |
| Michigan .....   | 73, 506  | 51, 484  |                      |             |             |
| Illinois .....   | 68, 324  | 32, 250  |                      |             |             |
| Kansas .....     | 50, 700  | 29, 590  |                      |             |             |
|                  |          |          | Total .....          | 3, 405, 365 | 3, 166, 177 |

For purposes of further comparison the aggregate pack each year during the last six seasons is presented:

| Year.      | Total pack.   | Year.      | Total pack.   |
|------------|---------------|------------|---------------|
|            | <i>Cases.</i> |            | <i>Cases.</i> |
| 1891 ..... | 3, 405, 365   | 1888 ..... | 3, 343, 137   |
| 1890 ..... | 3, 166, 177   | 1887 ..... | 2, 817, 048   |
| 1889 ..... | 2, 976, 765   | 1886 ..... | 2, 363, 760   |

#### SALMON.

The packing of salmon from the waters of our northwestern territory and from southern Alaska forms a very important part of the general canning industry. This industry is of course limited to the districts contiguous to the salmon-furnishing waters and must, of course, depend, for the present at least, upon the natural supply of fish. As yet the limit of the possible pack does not seem to have been reached, as the aggregate year by year grows larger with the increasing demand for purposes of consumption. According to the figures presented in the annual report of the San Francisco Produce Exchange the aggregate pack during the years 1880 and 1889, inclusive, has been as follows:

| Year.      | Cases.      | Year.      | Cases.      |
|------------|-------------|------------|-------------|
| 1880 ..... | 679, 490    | 1885 ..... | 835, 715    |
| 1881 ..... | 911, 100    | 1886 ..... | 933, 354    |
| 1882 ..... | 994, 800    | 1887 ..... | 997, 890    |
| 1883 ..... | 1, 106, 600 | 1888 ..... | 1, 189, 372 |
| 1884 ..... | 985, 295    | 1889 ..... | 1, 650, 000 |



The waters of Alaska now furnish the largest proportion of the annual supply. From a commercial estimate, the following statement showing the production of 1890 with the various sources of supply is presented:

| Source of supply.      | Cases.    |
|------------------------|-----------|
| Alaska .....           | 688,332   |
| Columbia River .....   | 433,500   |
| British Columbia ..... | 399,912   |
| Sacramento River ..... | 35,006    |
| All other .....        | 67,117    |
| Total .....            | 1,023,867 |

#### FOREIGN TRADE.

Canned goods form quite an important item in our foreign trade, and the aggregate value of our shipments increases from year to year as the quality of American goods becomes better known abroad. The distribution is remarkable for its range, shipments of some form of goods being made direct to almost every country, island, or independent port with which we have commercial relations. This wide distribution is especially marked in the case of our canned meats, though the United Kingdom takes by far the larger portion of the total shipments.

The trade in canned beef, now by far the largest item in the canned goods export, is of comparatively recent inauguration, the first record of separate shipments covering the year 1884, when the sales abroad amounted to \$3,173,767. From that date until 1889 the annual sales were comparatively uniform, but an impetus was given to the trade during the fiscal year 1890 which has continued, carrying the sales of last year to a point above \$9,000,000, and the records of the present year up to December 1 indicate that this high figure will be again reached during the fiscal year 1892.

The following statement presents the aggregate values of canned goods exported during the last three fiscal years, together with the value of each item contributing to the whole:

|                  | 1889.       | 1890.       | 1891.       |
|------------------|-------------|-------------|-------------|
| Fish:            |             |             |             |
| Salmon .....     | \$3,364,560 | \$3,259,344 | \$2,096,957 |
| Other .....      | 100,023     | 143,599     | 139,392     |
| Beef .....       | 4,375,213   | 6,787,193   | 9,068,906   |
| Fruits .....     | 915,341     | 698,321     | 703,880     |
| Vegetables ..... | 311,254     | 231,265     | 286,321     |
| Total .....      | 9,066,391   | 11,119,722  | 12,295,456  |

The demand which already exists for American products of this kind is an indication that the high standard of quality maintained by our packers in all lines of goods is appreciated in foreign markets. The extension of this trade, especially in the way of preparations of perish-



able fruits and vegetables, will open new markets, local in their nature, to our farmers, and assist in bringing about the diversification of rural cropping essential to the highest success in agricultural industry.

### AGRICULTURE IN URUGUAY.

The Oriental Republic of the Uruguay, as the smallest of the South American republics officially designates itself, instead of being also the least interesting, is in many respects one of the most progressive. Bounded on the north and partly on the east by Brazil, farther on the east and on the south by the Atlantic, and on the west by the estuary of La Plata and the Uruguay River, which divide it from the Argentine Republic, it is nearly inclosed on three sides by navigable waters as well as intersected by numerous navigable streams. Of its total frontier of 1,074 miles 200 is upon the Atlantic, 155 upon the La Plata, and in a direct line 270 upon the Uruguay, making 625 in all.

Uruguay was upon its first settlement a part of the viceroyalty of which Buenos Ayres was the capital, but subsequently became a province of Brazil, and so remained until on the 25th of August, 1825, it adopted a declaration of independence, which was given full effect by a treaty of August 27, 1828. A republican constitution was sworn July 18, 1830, by the provisions of which the Government is divided into the three usual branches. The President is elected for a term of four years, and is ineligible for the succeeding four years. The national legislature consists of a Senate and Chamber of Deputies, which meet in annual session extending from February 15 to July 15; but in the interval two senators and five deputies are intrusted with legislative powers. Senators, one for each of the nineteen departments, are chosen by an electoral college for terms of six years, the colleges being elected by the people. One-third of the senators retire every two years. Deputies are elected for a term of three years, one to every 3,000 adult male inhabitants who can read and write, there being a total of 53 such representatives. The Vice-President, elected for four years, presides in the Senate. The judiciary system is similar to that of other South American countries, based upon that of the United States.

### AREA AND POPULATION.

Uruguay extends from a little above 30° south latitude to about 35° south, or 346 miles north and south; and from longitude 53° to 58° 30' west, or about 290 miles from east to west, corresponding in position, relative to the equator and to a warm ocean current, to the State of Georgia, and having a similar climate as to temperature. Its area as given in the Statistical Annual of Uruguay is 186,920 square kilometers, or 72,170 square miles (English), about 2,000 square miles less than that of the State of Washington. The estimated area of each depart-



ment, with its estimated population, in the above-named government publication for 1889, with the names of the several departmental capitals, are given in the following table, viz:

| Department.           | Area.             | Popula-<br>tion. | Capital.         |
|-----------------------|-------------------|------------------|------------------|
|                       | <i>Sq. miles.</i> |                  |                  |
| Artigas .....         | 4,394             | 12,000           | San Eugenio.     |
| Canelones .....       | 1,835             | 68,359           | Guadalupe.       |
| Cerro Largo .....     | 5,755             | 19,697           | Melo.            |
| Durazno .....         | 5,527             | 22,403           | Durazno.         |
| Flores .....          | 1,745             | 15,295           | Trinidad.        |
| Florida .....         | 4,675             | 27,173           | Florida.         |
| La Colonia .....      | 2,193             | 35,405           | Colonia.         |
| Maldonado .....       | 1,585             | 16,564           | Maldonado.       |
| Minas .....           | 4,826             | 22,535           | Minas.           |
| Montevideo .....      | 256               | 185,211          | Montevideo.*     |
| Paysandú .....        | 5,117             | 28,417           | Paysandú.        |
| Rio Negro .....       | 3,271             | 14,265           | Independencia.   |
| Rivera .....          | 3,792             | 18,966           | Rivera.          |
| Rocha .....           | 4,281             | 17,549           | Rocha.           |
| Salto .....           | 4,865             | 25,027           | Salto.           |
| San José .....        | 2,688             | 21,147           | San José.        |
| Soriano .....         | 3,561             | 26,133           | Mercedes.        |
| Tacuarembó .....      | 8,117             | 22,363           | San Fructuoso.   |
| Tridenta y Tres ..... | 3,687             | 15,748           | Tridenta y Tres. |
| Total .....           | 72,170            | 614,257          |                  |

\* Also the capital of the Republic.

The latest census of the province of Montevideo, November 18, 1889, showed a population of 214,682, of which 100,104 were foreigners, the balance mostly of mixed Spanish and Indian blood, and four-fifths lived in the city of Montevideo. The province of Artigas has less than 3 inhabitants to the square mile, while that of Montevideo has, taking the last census number for a guide, 838.6; and nearly or quite half of the population is contained in three of the nineteen provinces. Increase by immigration, for which effort is made, has been considerable during the last few years, both Uruguay and Paraguay profiting in this respect from the Argentine reverses.

#### PUBLIC FINANCES AND NATIONAL WEALTH.

Uruguay publishes annually what appear to be very complete statistics of the national funds and of the productive capital in the hands of private parties throughout the country. Relative to the former, the principal revenue accrues from customs duties, about one-third being derived from direct taxes, licenses, stamped paper, and stamps. For 1889 the revenue is stated in the Hand Book of the American Republics to have been \$15,690,294, the expenditures \$15,811,308, and the public debt on January 1, 1890, \$81,279,752. Although import duties are high, they are so far below those of Brazil that large quantities of goods are said to enter that country through Uruguay, paying duties only to the latter.

By the customs law of 1888, in force in 1890, "all foreign merchandise imported for consumption" paid a duty of 31 per cent ad valorem, except arms, powder, hams, meat, butter, cheese, etc., which paid 51



per cent; hats, clothes, shoes, furniture, carriages, etc., which paid 48, and various food preparations 44 per cent.

From statements relative to the payment of direct taxes in 1887, in the Statistical Annual and as given by Child in his work herein referred to, 54,761 proprietors represented \$272,529,674 of property, gold value, 51.34 per cent of these capitalists being foreigners and the balance natives. Of the former class Italians lead in number, followed in order by Spaniards, Brazilians, French, Argentines, English, Germans, Swiss, Portuguese, etc. Brazilians have the largest capital, \$50,823,238, while the French represent \$16,000,000, the English \$8,000,000, and the Germans \$3,000,000.

#### MENTAL AND RELIGIOUS INSTRUCTION.

Primary school instruction is obligatory in Uruguay upon children from 6 to 14 years old, and provision is made for this in about 400 public and the same number of private schools, with over 1,400 teachers. There are, for higher education, numerous academical institutions, religious seminaries, a few colleges, and a university at Montevideo having 60 professors and nearly 700 students, besides a normal school for girls, and a technical school upon a military plan for orphan boys over 14 years old. There are also a national library and national museum, and about a hundred newspapers and periodicals. The state religion is Roman Catholic, but there are several Protestant churches tolerated.

#### MEANS OF COMMUNICATION.

Little can be said in favor of the common highways of Uruguay, upon which "the jolting diligence maintains an undisputed reign over a greater part of the territory; roads are wanting." "As in the Argentine, the railways already made, in making, or to be made, are practically the monopoly of English capital."\* The most of the lines are owned by the Central Uruguay Company, and are in regular operation, or, in the case of the three last named below, to be completed in 1892. The length of the lines and their terminal cities are as follow:

|                                              | Miles.   |
|----------------------------------------------|----------|
| From Montevideo to Paso de los Toros.....    | 231.78   |
| From Paso de los Toros to Salto.....         | 197.60   |
| From Cuareim to Salto.....                   | 111.23   |
| From Veinte Cinco de Agosto to San José..... | 20.50    |
| From Montevideo to Minas.....                | 76.19    |
| From Toledo to Nico Perez.....               | 186.42   |
| From Paso de los Toros to Rivera.....        | 186.42   |
| Total length.....                            | 1,010.14 |

The main lines of these roads connect the western parts of the country with Montevideo, Brazil, and important points on the Uruguay and

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\* Child's Spanish American Republics.



La Plata rivers. Another line about 45 miles long, likely to be built, would place the Brazilian province of Rio Grande do Sul in direct communication with Montevideo, toward which its business sympathies at least extend.

Through the improved port of Montevideo, and some others, Uruguay has connection with many lines of foreign steamers, and there is all necessary steam service upon the La Plata and far up the Uruguay, as there is to some extent upon tributary streams.

The telegraph lines in operation in 1889 had a length of 2,422 miles, besides a submarine cable of 173 miles. The mails carried nearly six million letters and packets, over fifty-six thousand postal cards, and over fourteen million pieces of printed matter and samples during 1888.

#### PHYSICAL CHARACTERISTICS.

Relative to the general appearance of the country, away from the principal river, Mr. Child states as follows, after personal inspection in 1890:

The physical aspect presents a strong contrast with the flat, treeless, and often arid pampas of the Argentine; the Banda Oriental abounds in wood, water, and hills; from end to end the undulation is continuous, and in some departments, for instance Minas, one might almost imagine one's self in Switzerland, so fine does the hill and mountain scenery become. \* \* \* The hill chains are numerous, and spread over the whole country, forming countless streams, rivers, and lakes. There are also many isolated hills, like the Cerro of Montevideo. The greatest height of the mountains, if they may be so called, is 500 meters (1,640 feet), attained by the Cuchilla Grande, and a little less for other chains of mountains.

As to the appearance of the country along the principal rivers, the same observer states:

The important rivers number seventeen, of which the chief are the Plata, the Uruguay, and the Rio Negro, the last of which runs through the center of the territory. The Uruguay River is navigable as far as Paysandú for ocean-going ships, and as far as Salto for coasters and for the passenger steamers of light draft of the Platense Company. \* \* \* The scenery of the Uruguay resembles that of the Paraná, being in some places perhaps a little bolder and more picturesque, but in general the aspect of the banks, of the bluffs, and of the towns offers nothing strikingly different from what may be seen on the Paraná between Martin Garcia and Corrientes. \* \* \* The watershed of the Rio Negro covers nearly three-fourths of the Republic, and the soft scenery of its banks is characteristic of large sections of the country.

Situated in the temperate and close to the tropical region, with its eastern and southern parts exposed to the continual influence of a portion of the great equatorial current, Uruguay, with its fertile soils similar to those of Paraguay and its equable temperature, has the possibilities of producing in much perfection most of the crops and fruits of both a temperate and subtropical climate. Agriculture has been developed, however, only in the provinces of Montevideo, Canelones, and Colonia, its progress in the interior not being notable. The three provinces named are the most populous in the country, but their united area is considerable less in extent than that of the State of Connecticut.



The remaining seventeen-eightieths, larger in extent than the State of Missouri, is mostly in a primitive condition, except as modified by the prevalent industry of cattle-raising.

## CLIMATIC CONDITIONS.

Having usually neither extreme heat nor cold, nor an excessive annual rainfall, Uruguay has a climate favorable to health and to out-door industry, superior to that of any other country of South America, as a whole. The following table, compiled from the Statistical Annual of Uruguay for 1887, exhibits the climatic conditions at Montevideo for several years:

*Season temperatures and rainfall at Montevideo for six years ending with the year 1886.*

| Years.    | Seasons.      | Temperature, F. |          |          | Rainy days. | Rainfall in inches and hundredths. |
|-----------|---------------|-----------------|----------|----------|-------------|------------------------------------|
|           |               | Maximum.        | Minimum. | Average. |             |                                    |
|           |               | °               | °        | °        |             |                                    |
| 1881..... | Summer .....  | 85.75—          | 50.47—   | 68.11—   | 19          | 10.82                              |
|           | Autumn .....  | 82.89—          | 19.40    | 56.48    | 13          | 12.79                              |
|           | Winter .....  | 72.05           | 5.67—    | 52.07    | 34          | 15.39                              |
|           | Spring .....  | 78.90           | 14.45    | 64.04    | 16          | 5.78                               |
| 1882..... | Summer .....  | 90.79—          | 20.59—   | 70.28+   | 16          | 12.57                              |
|           | Autumn .....  | 78.19—          | 16.39+   | 59.32+   | 14          | 3.47                               |
|           | Winter .....  | 77.22—          | 10.85    | 52.51+   | 35          | 3.29                               |
|           | Spring .....  | 86.00           | 50.00    | 64.81+   | 12          | 5.12                               |
| 1883..... | Summer* ..... |                 |          |          |             |                                    |
|           | Autumn .....  | 92.75           | 10.40    | 62.53—   | 27          | 15.84                              |
|           | Winter .....  | 77.00           | 7.70     | 53.69+   | 37          | 16.61                              |
|           | Spring .....  | 87.80           | 6.80     | 60.89    | 24          | 13.60                              |
| 1884..... | Summer .....  | 100.94          | 20.30    | 72.39+   | 18          | 6.01                               |
|           | Autumn .....  | 92.30           | 8.60     | 62.80—   | 26          | 14.04                              |
|           | Winter .....  | 80.96           | 5.36     | 51.15+   | 18          | 5.44                               |
|           | Spring .....  | 87.80           | 15.44    | 62.29+   | 18          | 12.02                              |
| 1885..... | Summer .....  | 96.80           | 51.80    | 72.57+   | 14          | 8.61                               |
|           | Autumn .....  | 86.00           | 14.00    | 61.61    | 23          | 11.51                              |
|           | Winter .....  | 80.24           | 5.00     | 19.81+   | 16          | 5.27                               |
|           | Spring .....  | 91.40           | 8.60     | 62.22+   | 21          | 11.27                              |
| 1886..... | Summer .....  | 100.04          | 51.08    | 73.29+   | 17          | 13.85                              |
|           | Autumn .....  | 87.44           | 13.10    | 61.80+   | 19          | 8.00                               |
|           | Winter .....  | 71.60           | 5.36     | 50.52+   | 16          | 6.88                               |
|           | Spring .....  | 86.00           | 14.00    | 59.36    | 24          | 6.61                               |

\* Not stated. These observations were taken by the Society of Sciences and Arts.

Dr. Martin de Moussy observed the temperature, rainfall, and winds at Montevideo from 1843 to 1852, and states that only once in that time the thermometer showed 41° C. (105.8° F.), which was in January, 1847. From October to April are the hot months, and from May to September the winter ones. These are practically the only seasons, which may be called winter and summer. "Of the climate no evil can be spoken," is Mr. Child's final testimony.

## FIELD AND FARM PRODUCTS.

Notwithstanding the adaptation of the most of Uruguay, with and without irrigation, to the usual farm products of a temperate climate and alluvial soil, there is little to record concerning cultivated crops except



that these, of all descriptions demanded in its markets, are raised in sufficient amounts for home needs, and as to wheat, an irregular surplus for exportation. Neither coffee, nor sugar, nor cotton, nor tobacco enter into the exportations, and they are not raised in appreciable quantities, or at all. A small amount of alfalfa, barley, and a few vegetables and fruits are produced beyond the needs of the population. Corn was exported in 1887 of the value of over \$39,000, and wheat valued at \$132,583.

Indeed, the people of Uruguay seem disposed, from the attention their statistics devote to the matter, to extend their production of wheat for export, since they sometimes produce more than they consume; and further, to extend the manufacture of flour for the same purpose. And it should be noted that of the countries of South America bordering upon the Atlantic Uruguay presents the best conditions for the successful growing of wheat, without doubt. Conditions are less favorable in Rio Grande do Sul, Brazil, and northward, as was shown in part in the article upon agriculture in Brazil, and that they are also less so to the south will appear in a succeeding article. But notwithstanding soil and climate factors of favorable character, a country so little given to soil cultivation as Uruguay, of such small extent and number of inhabitants, and for three hundred and fifty years devoted to cattle raising, the present principal occupation and of increasing extent, is not likely to ever seriously influence the grain markets of the world. Its probable future importance in this respect may, however, be best considered in connection with that of that portion of the basin of the La Plata belonging to the Argentine Republic, of which it forms a part as to physical character and progress in development.

The departments of Canelones and Colonia are the present cereal producers, the latter to a small extent, and in its colonized parts, from which the yield is not reported in amount. The Statistical Annual for 1887 shows that Canelones produced in that year 2,156,252 bushels of wheat, or over 130,000 bushels less than Arkansas produced the same year on 231,357 acres. The yield was 10 bushels to 1 sown. The production of corn in the department was 537,834 bushels—25.3 to 1 planted—or something over a fifth more than was grown in Rhode Island, which has a smaller area, in the same year. During the five years ending in 1887 the average annual value of flour exported from Uruguay, less importation, was \$337,708, and of wheat \$35,734; total, \$373,472.

During the same time the annual average number of bushels of wheat, of 60 pounds to the bushel, presented for market at Montevideo was 1,175,755. The figures for the series of five years show an average increased production of over 91,000 bushels per year, with variations of from 366,000 to 550,000 bushels from the average annual crop each way, indicating, what is not well known relative to the wheat region on the Atlantic side of South America, great fluctuation of production. In the year ending June 30, 1889, Uruguay imported from the United States



198,259 bushels of wheat and 22,119 barrels of flour, worth together \$277,500, and in 1890 731,636 bushels of wheat and 10,809 barrels of flour, worth \$701,734. The value of the importations for the last named year was nearly double that of the annual average exports of wheat and flour from Uruguay during the five years ending with 1887, before detailed. The deficiency which required the imports of 1889 and 1890 was caused by excessive rains during the wheat seasons, as reported by the United States consul.

#### THE CATTLE INDUSTRY.

“The chief industry of Uruguay is cattle raising. \* \* \* For cattle raising it is the finest country in South America,” says Child in stating the results of his personal observations, and confirming the views of others. Uruguay is so situated relative to facilities of shipment of range products to foreign markets, also, as to be the most favored, and therefore secures the largest net profit from its stock.

The Statistical Annual for 1887 and the official tax returns for 1883 give the total numbers of the different kinds of stock for those years as follows:

| Kinds of stock.    | Number, 1883. | Number, 1887. |
|--------------------|---------------|---------------|
| Horned cattle..... | 6,909,791     | 6,134,565     |
| Sheep.....         | 14,595,495    | 15,104,428    |
| Horses.....        | 512,228       | 429,790       |
| Mules.....         | 8,327         | 6,949         |
| Goats.....         | 6,146         | 16,837        |
| Swine.....         | (*)           | 17,127        |
| Total.....         | 22,031,987    | 21,709,696    |

\*Not stated.

The valuation of this stock in the official returns is very low, according to ideas of value ruling where markets are better, and are given by Mr. John E. Bacon, chargé d'affaires of the United States at Montevideo in 1886,† as follows:

|             |         |                       |        |
|-------------|---------|-----------------------|--------|
| Oxen.....   | \$10.00 | Mules.....            | \$6.00 |
| Cows.....   | 5.00    | Mules, broken in..... | 12.00  |
| Horses..... | 8.00    | Sheep.....            | .60    |
| Mares.....  | 1.00    | Goats.....            | .60    |
| Swine.....  | 5.00    | .                     | .      |

It should be stated, relative to the price of mares, that these animals are never used in Spanish America for any ordinary purposes, but only on the estancias for purposes of breeding, so that aside from the latter they are practically valueless, unless for food.

Relative to the pastoral industry, and giving it importance in Uruguay and some other portions of South America, is the related one of the

† Consular Reports, No. 73.



saladeros,\* where animals are killed and variously fitted for market. The principal of these establishments in Uruguay are at Montevideo, and at Frey Bentos, Paysandú, and Salto, on the Uruguay River. At Frey Bentos Liebig's extract of beef is made, where 1,000 cattle per day are slaughtered through the summer. At the others the meat is cut into strips and salted and dried in the sun, forming the *charqui* or *tasajo*, which is exported in bags to Brazil, Cuba, etc. As the demand for this kind of meat is decreasing, efforts are being made for an organized exportation of live cattle and refrigerated meat to European markets. At present Mr. Child estimates the slaughter of cattle in Uruguay to amount to over 700,000 per year, one-half at the saladeros of Montevideo. The number of the meat animals introduced from the interior into that city in 1887, as officially stated, and the disposition made of them may be tabulated as follows:

| Kinds of stock. | Arrived. | Con-<br>sumed. | For the<br>saladeros. | Exported. | For the<br>interior. |
|-----------------|----------|----------------|-----------------------|-----------|----------------------|
| Cattle .....    | 290, 017 | 111, 974       | 173, 892              | .....     | 4, 151               |
| Sheep .....     | 66, 414  | 55, 318        | .....                 | 11, 096   | .....                |
| Goats .....     | 11, 355  | 11, 355        | .....                 | .....     | .....                |
| Swine .....     | 5, 540   | 5, 540         | .....                 | .....     | .....                |
| Horses .....    | 18, 783  | .....          | <sup>1</sup> 18, 783  | .....     | .....                |
| Mules .....     | 838      | .....          | .....                 | 838       | .....                |

<sup>1</sup> As this statement is from an official annual, it may be taken as a Government statement of the export of horse flesh for food, the saladero products being for export.

This statement so far, however, does not show the total amount of meat products for home consumption or for export either through the saladeros or on the hoof. The most recent statement in this respect is that of Mr. Bacon for 1883, in the consular report before cited, and is as follows:

|                                                                                                    |          |             |
|----------------------------------------------------------------------------------------------------|----------|-------------|
| Horned cattle (home meat supply), in which is included the beef furnished to naval squadrons ..... | number.. | 502, 000    |
| Live cattle exported per annum .....                                                               | do....   | 102, 000    |
| Killed in saladeros (slaughterhouses) per annum .....                                              | do....   | 704, 000    |
| Total .....                                                                                        | do....   | 1, 308, 000 |

This is supposed to represent the largest portion of the increase of the herds and flocks of Uruguay. The forms which the exports derived from this source assume, and the amounts under each head, are given as follows for the same year:

|                                                    |          |               |
|----------------------------------------------------|----------|---------------|
| Jerked beef or dried meat ( <i>charqui</i> ) ..... | pounds.. | 76, 706, 770  |
| Pressed meat .....                                 | do....   | 3, 326, 751   |
| Extract of meat .....                              | do....   | 1, 099, 630   |
| Grease .....                                       | do....   | 37, 601, 739  |
| Tallow skins .....                                 | do....   | 11, 547, 590  |
| Artificial guano (refuse) .....                    | do....   | 9, 000, 000   |
| Hair .....                                         | do....   | 3, 250, 102   |
| Total weight .....                                 | do....   | 142, 532, 582 |
| Cowhides .....                                     | number.. | 1, 638, 730   |
| Sheep, living .....                                | do....   | 142, 000      |

\* Literally, salting places.



The authority last cited states that from 600,000 to 700,000 cattle are slaughtered annually at the saladeros, "besides a vast number of sheep, and from 50,000 to 80,000 mares." He also gives the value of the component parts of a young ox at the saladeros, which is here given as stated, except the resulting sums, which are herein corrected and exceed his estimate of total value, viz:

|                                                     |        |
|-----------------------------------------------------|--------|
| Meat, 150 pounds, at 55 reals* per 100 pounds ..... | \$9.90 |
| Hides, 68 pounds, at 71 reals per 75 pounds .....   | 7.74   |
| Tallow, 40 pounds, at 13 reals per 25 pounds .....  | 2.49   |
| Remnants .....                                      | .50    |
| Total value .....                                   | 20.63  |

The saladero expenses for each animal are stated at \$3.60.

#### RURAL INDUSTRIES GENERALLY.

Of the 72,170 square miles in Uruguay, it was officially ascertained in 1884 that 1,507,277 acres only were devoted to farming, 38,750,406 to grazing, and the remaining 5,930,880 were waste or unclassified. Since that date, however, agriculture has made considerable progress, especially through colonists, and agricultural machinery from the United States has been freely introduced. Nearly all the lands are held by private owners, and the State, which encourages and assists immigration, has no land to bestow or sell. For taxation, agricultural land is valued at from \$5 to \$8 per cuadra, and grazing land at \$10,000 to \$14,000 per suerte.†

The soil is generally very fertile, and wheat, barley, oats, vegetables, and fruit are grown with little labor. In two or three departments tobacco has been successfully tried. The corn now cultivated is inferior in quality, but it does not appear that this is necessarily so. The grasses of the pastoral lands are perennial, succulent, and abundant, and, in connection with the mild climate and well-distributed water supply, are a great encouragement to stock-raising. The amount of wool furnished by Uruguay to France, Great Britain, and the United States was valued at \$5,861,164 for 1889; but Germany is a considerable importer, and Belgium perhaps the greatest, and the value of the actual clip of that year, as stated in Bulletin No. 6 of the Bureau of American Republics—viz, 9,150,000 pesos, equivalent to \$9,472,080 in United States money—is probably nearly correct. On the basis of the number of sheep of 1887, the yield per head was about 63 cents in value. The value of the clip of 1886 was approximately stated by Chargé d’Affaires Bacon at \$10,000,000.

The clip consists wholly of fine clothing wool, noted for softness, lightness, and strength. It is sent to market in bags of about 250 pounds, and baled for export in bales of about 1,000 pounds. The customs valu-

\*Value of the real, 12 cents.

† A cuadra, or square, contains about 2 acres, and a suerte 2,700 cuabras.



ation upon which duty is based is \$17 per 100 kilograms (about 220 pounds, at \$7.73 per hundred), and 6 per cent is collected upon this valuation as export duty. The distribution of the clip of 1886 was as follows: \*

| Destination.        | Bales.  | Destination.   | Bales.  |
|---------------------|---------|----------------|---------|
| Belgium .....       | 31, 140 | Italy .....    | 818     |
| France .....        | 13, 350 | Portugal ..... | 968     |
| United States ..... | 13, 404 | England .....  | 715     |
| Germany .....       | 3, 367  | Spain .....    | 102     |
|                     |         | Total .....    | 63, 864 |

#### FOREIGN COMMERCE.

Considering the small extent and number of its population and area, respectively, the foreign trade of Uruguay appears large; but it should be remembered that much of the trade of the Brazilian province of Rio Grande do Sul and some of that of Paraguay is represented in the import and export figures of that nation. The respective branches of its trade and the total for three recent years are shown as to value in the following statement, based upon the Statistical Annual, viz:

|               | 1888.          | 1889.          | 1890.          |
|---------------|----------------|----------------|----------------|
| Imports ..... | \$30, 515, 054 | \$38, 120, 663 | \$33, 498, 608 |
| Exports ..... | 28, 994, 144   | 26, 867, 691   | 30, 109, 327   |
| Total .....   | 59, 509, 198   | 64, 988, 354   | 63, 607, 935   |

The details of the trade for 1890 are not at hand, but the following table for 1889 shows the imports, exports, and total value by countries, and is derived from the same source as the preceding, viz:

| Countries.                | Imports from.  | Exports to.   | Total trade.   |
|---------------------------|----------------|---------------|----------------|
| Great Britain .....       | \$10, 840, 574 | \$3, 677, 030 | \$14, 517, 604 |
| France .....              | 5, 710, 163    | 5, 407, 884   | 11, 118, 047   |
| Brazil .....              | 2, 593, 176    | 3, 410, 984   | 6, 004, 160    |
| Belgium .....             | 1, 683, 235    | 4, 255, 707   | 5, 938, 942    |
| United States .....       | 3, 532, 102    | 1, 491, 723   | 5, 023, 825    |
| Germany .....             | 3, 552, 806    | 1, 345, 760   | 4, 898, 566    |
| Argentine Republic .....  | 1, 501, 040    | 2, 370, 608   | 3, 871, 648    |
| Italy .....               | 3, 375, 787    | 395, 446      | 3, 771, 233    |
| Spain .....               | 2, 707, 048    | 379, 918      | 3, 086, 966    |
| All other countries ..... | 2, 624, 232    | 4, 132, 518   | 6, 756, 750    |
| Total .....               | 38, 120, 163   | 26, 867, 578  | 64, 987, 741   |

While the foregoing table shows the volume and distribution of the foreign trade of Uruguay according to the official statement of that country, it disagrees with the official statement of this Government considerably for the year named, probably because that country reck-

\*Vice-Consul Howard, of Montevideo, in Consular Report No. 73.



ons by the calendar and this by the fiscal year. The differences make the imports from this country larger, by the returns of Uruguay, by \$1,504,719, and the exports to this country smaller by \$1,495,241, varying the volume by only \$9,478, but attributing a more favorable character to it, so far as this country is concerned, than it seems actually to possess. The following tables show our trade with Uruguay from the United States Treasury returns for the years named:

*Imports from the United States.*

| Articles.                         | 1886.       | 1888.       | 1890.       |
|-----------------------------------|-------------|-------------|-------------|
| Wood, and manufactures of.....    | \$302, 163  | \$412, 754  | \$833, 652  |
| Breadstuffs .....                 | 2, 756      | 2, 033      | 705, 463    |
| Mineral oils, refined.....        | 189, 886    | 241, 276    | 385, 627    |
| Iron and steel manufactures ..... | 85, 110     | 143, 898    | 294, 712    |
| Agricultural implements.....      | 51, 652     | 66, 788     | 230, 280    |
| Cotton manufactures.....          | 77, 968     | 112, 932    | 157, 585    |
| Chemicals, drugs, etc.....        | 20, 833     | 40, 832     | 42, 835     |
| Meat and dairy products.....      | 54, 227     | 42, 900     | 61, 904     |
| All other articles.....           | 325, 950    | 274, 017    | 498, 054    |
| Total .....                       | 1, 110, 545 | 1, 337, 430 | 3, 210, 112 |

*Exports to the United States.*

|                                |               |               |               |
|--------------------------------|---------------|---------------|---------------|
| Hides and skins, not fur ..... | \$3, 094, 945 | \$2, 116, 142 | \$1, 472, 993 |
| Wool, unmanufactured.....      | 1, 336, 870   | 385, 703      | 30, 034       |
| Hair, unmanufactured .....     | 209, 629      | 91, 655       | 118, 825      |
| All other articles .....       | 284, 404      | 118, 021      | 93, 051       |
| Total .....                    | 4, 925, 848   | 2, 711, 521   | 1, 754, 903   |
| Total trade .....              | 6, 036, 393   | 4, 048, 951   | 4, 965, 015   |

These tables show among other facts that the importation of farm products into Uruguay from the United States during the five years considered increased from \$56,983 to \$767,367 in value, and that its exports of pastoral products to this country decreased \$3,019,592. In the meantime the volume of trade between the two countries has diminished over \$1,000,000, while with France, Belgium, Germany, Italy, and Spain the trade of Uruguay is increasing slowly. From most European countries there are lines of steamers to the ports of Uruguay and the Argentine Republic, and also many sailing vessels, affording abundant shipping facilities, but the flag of the United States is most conspicuous by its absence from South American waters.

IMPORT AND EXPORT DUTIES.

Tables showing the existing import duties upon specified agricultural products introduced into Uruguay were published in the monthly report of this Bureau for September, 1890. Export duties upon certain animal products of that country were reported by Consul Hill, in Octo-



ber, 1890, to be as follows, reduced to pounds and to United States values as near as possible:

| Articles.                            | Duty.    | Articles.                      | Duty.    |
|--------------------------------------|----------|--------------------------------|----------|
| Wool .....per 100 pounds..           | \$0. 572 | Oxhides, salted .....each..    | \$0. 241 |
| Sheepskins.....do.....               | . 360    | Oxhides, dried .....do.....    | . 117    |
| Hair .....do.....                    | . 777    | Horsehides, salted.....do..... | . 117    |
| Grease, tallow, etc.....do.....      | . 219    | Horsehides, dried .....do..... | . 058    |
| Jerked beef .....do.....             | . 176    | Calfskins.....per 100 pounds.. | . 439    |
| Preserved meat, tongues.....do.....  | . 439    | Sealskins.....each.....        | . 154    |
| Hoofs .....do.....                   | . 109    | Horns.....per 1,000..          | 2. 412   |
| Ashes, bones .....per 1,000 pounds.. | . 263    | Meat extract .....per pound..  | . 044    |
| Animal manure .....do.....           | . 263    |                                |          |

#### CONCLUSION.

Uruguay is not alone interesting in itself as a rapidly developing agricultural country, but because it is representative of a much greater area, a large portion of which is less developed, in the Argentine Republic, including parts of the provinces of Buenos Ayres, Entre Rios, Corrientes, Cordoba, Santa Fé, and the territories of Misiones and Gran Chaco, and probably a portion of Paraguay, of identical or similar character in many of their topographical, hydrographical, climatic, and soil features. The total of this area, including Uruguay, is over 580,000 square miles, and of this approximately two-thirds, or 386,000 square miles, is of similar physical characteristics; but this is a smaller area by 9,000 square miles than that of Texas and New Mexico together, a region which may be compared with the South American one in many respects without losing in the comparison.

#### AGRICULTURE IN THE GUIANAS.

The regions on the northeastern coast of South America forming the only European possessions on its main land are a portion of a larger region discovered by Columbus in 1498, and later given the name of Guiana, Guyana, or Guayana. The greater portion of the large region belongs to Venezuela and Brazil, the whole being included between the Orinoco and the Amazon, and has been included in the consideration of the agriculture of those countries under their respective heads. The colonial regions are known now as British Guiana, Dutch Guiana, and French Guiana, and pertain as possessions to the respective countries indicated by their names. They are of comparatively small extent and importance, and for the purposes of this article may be treated together in many of their features. They are each under the administration of a governor and subordinate officers appointed by the home government, and have local legislatures.

#### AREA AND POPULATION.

The Guianas extend along the Atlantic from about latitude 4° to 7° north, or from the River Oyapok to the Essequibo, but in the interior the



southern limit reaches to less than a degree of the equator. From east to west the extent is from  $51^{\circ}$  to about  $58^{\circ}$  west longitude. The areas of the respective possessions in square miles, as given in the *Encyclopædia Britannica*, and the population of the two latter as given in the *Almanach de Gotha* for 1891, are as follows:

| Colonial possessions. | Area.               | Popula-<br>tion.     |
|-----------------------|---------------------|----------------------|
| British Guiana .....  | 76,000              | <sup>1</sup> 252,186 |
| Dutch Guiana .....    | 58,530              | 66,037               |
| French Guiana .....   | <sup>2</sup> 53,000 | <sup>3</sup> 25,796  |
| Total .....           | 187,530             | 344,019              |

<sup>1</sup> Statesman's Year Book for 1885.

<sup>2</sup> Rambaud, in "Colonial France," claims "about" 57,915.

<sup>3</sup> Of this population 4,400 are convicts in prison or liberated.

Since 1886 Great Britain has claimed and taken possession of 33,000 square miles, extending to the north of the Orinoco, always previously in the possession of Venezuela and still claimed by that Republic, which area bears a population of nearly 30,000 inhabitants, according to the British calculation of 1890, in the Year Book for 1891.\* The historic area stated in the foregoing table is 10,000 square miles greater than that of Spain, and 5,000 greater than that of the New England States, New York, New Jersey, Pennsylvania, Delaware, and Maryland combined.

#### COLONIAL FINANCES.

The estimated receipts and expenditures of British Guiana for 1890-'91, and the actual of the other colonies for 1889, as stated in the *Almanach de Gotha* and the *Statesman's Year Book* for 1891, may be tabulated in United States values as follows:

| Colonial possessions. | Receipts.   | Expendi-<br>tures. | Excess or<br>deficiency. |
|-----------------------|-------------|--------------------|--------------------------|
| British Guiana .....  | \$2,554,912 | \$2,523,270        | \$31,642                 |
| Dutch Guiana .....    | 254,917     | 314,031            | <sup>1</sup> 59,114      |
| French Guiana .....   | 206,866     | 427,648            | <sup>1</sup> 220,782     |
| Total .....           | 3,016,695   | 3,264,949          | <sup>1</sup> 248,254     |

<sup>1</sup> Deficiencies.

The deficiencies of Dutch and French Guiana, which are of annual occurrence, are borne by the respective home governments, so that no standing debt is created. British Guiana had a public debt in 1889 of \$3,588,555.

#### PHYSICAL CHARACTERISTICS.

The general appearance of the surface of the Guianas, from the coast line to the interior, indicates successive elevation of the land which has corresponding bench marks, showing former coast lines. The

\*See article of this series on Venezuela.



shore is also skirted by mud banks, the water on which decreases in depth shoreward, or by mangrove marshes, as in French Guiana, and there are bars of mud, quicksands, and rocks at the mouths of the rivers, so that much of the country is unapproachable to vessels of any considerable draft. The British colonial capital, Georgetown, has a mud bar under 8 feet of water at the mouth of its port; the French, Cayenne, has a shallow harbor; but the Dutch, Paramaribo, 5 miles up the Surinam River, which is there half a mile wide and 5 miles in width at its mouth, admits vessels of 18 feet draft, and is ample in every respect.

The flat coast lands of British and Dutch Guiana are on a level with the sea at high water, and generally extend inland many miles. Back of this extensive level the land gradually swells to an elevation of 200 feet, forming the northern edge of the table lands. This generally rising plateau is intersected by parallel ranges of hills, extending to the mountain ranges in the extreme south, which are highest towards their western parts, the loftiest eminence, Mount Roraima, reaching 7,500 feet.\* This territory is drained by six large rivers and their numerous tributaries, the rivers being navigable in some cases for 100 miles.

Fully half of this extensive region is covered with a dense tropical forest, and nearly all with a luxuriant vegetation. About one-fourth is comprised in meadow plains, where considerable herds of cattle and horses find pasturage, and the remainder is included in plantations where the usual cultivated productions of the tropics flourish. Sugar, cotton, and tobacco are raised for export, and cocoa and indigo to some extent, while over a considerable part of the country coffee grows wild. The soil is everywhere rich, with underlying sandstone or granite, and the scenery of the interior is remarkable for its beauty and occasionally for its boldness, one waterfall, 369 feet wide, making a single leap of 822 feet into the valley of the Essequibo, and one precipice of 1,500 feet from the flat top of a mountain being veiled in the waters and spray of numerous cascades.

#### CLIMATIC FEATURES.

Situated just north of the equator, and washed by the northward branch of the great equatorial current, the Guianas are necessarily intensely tropical, especially along the extensive low and marshy coast. The character of the heat of the South American tropics, where the earth is not generally arid, is usually misjudged by people not familiar with it and its effect. It seldom rises to the intensity there that it does in Washington or New York, and consequently sunstroke there is scarcely known; but it manifests its power through a generally high average, which varies little, compared with the variations in what are called temperate regions, between night and day, or between the various seasons. Therefore a uniformly hot climate may be a generally healthy one, re-

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\* American Cyclopaedia.



quiring other coincident influences or causes to make it otherwise. Heat decreases with elevation with remarkable rapidity in the tropics as surely as elsewhere also, so that, while geographically equatorial, it may actually attain or lose any known degree of temperature measurement.

Naturally perhaps, as the coast and river regions of the Guianas and of South America generally contain the larger part of the civilized population, reports of climate and its effects are in great part confined to them; and these regions of greatest heat, low elevation, stagnant waters, and rapidly growing and decaying vegetation give untruthfully their naturally bad character to more extensive and naturally salubrious interior or adjoining ones. It is true that the coast of the Guianas is hot and unhealthy, with little exception; and it is equally true that back from the lowlands the climate is agreeable, even delightful, and favorable to health. This rule applies to the most of Spanish America.

Of British Guiana the *Encyclopædia Britannica* states that—

the climate, especially in the interior, is healthy. The even temperature is considered suited for pulmonary complaints, and tubercular consumption is unknown.  
\* \* \* The thermometer seldom rises above 90° or falls below 75° F. At Georgetown the mean annual temperature is 81.2°.

The average annual rainfall for the five years ending with 1877 was 74 inches.

Of Surinam, or Dutch Guiana, the same authority states that, though the climate is moist and hot, "like a Turkish bath," it seems to agree with European constitutions. The mean annual temperature is 80.°4 F.; the mean of the coldest month is 78° and of the hottest 99°. The average rainfall for eight years at various points was as follows: Paramaribo, 101 inches per year; Gelderland, 108; Groningen, 91; Nickerie, 67, and Monbijou, 129.

M. Alfred Rombaud, in "Colonial France," gives the mean annual temperature of French Guiana at 28° C. (82.°4 F.), the maximum temperature at 31° (87°·8 F.), with rare exceptions, and the minimum at 23° (73°·4 F.) This statement coincides substantially with that of the work before cited. He states also that the annual rainfall is from 3 to 4 meters (118 to 157 inches), and that the rainy days number 160 to 180 in the year.

In all the Guiana region there are the two tropical seasons, the wet and the dry, with some variations, as in other similar regions, which give to the generally rainy season a little time of abatement, and to the generally dry one some days of rain.

#### AGRICULTURAL AREA AND PRODUCTIONS.

It would not be far out of the way to say that nearly all of the area of the Guianas is suited to agricultural utilization, for the low lands inundated by the sea have been partly reclaimed by a system of dikes, and may be still further to a much greater extent, and form the richest



sugar plantations. The interior, upon the hill and mountain sides, is suited admirably to coffee culture, even where it is useful for little besides, and the proportion of waste land is not excessive. But, like the most of South America, this naturally prolific region is nearly all undeveloped, especially in the portion pertaining to France, which has no present industrial significance except that which pertains to a small penal colony.

In 1889 British Guiana had 81,660 acres in cultivation, of which 78,110 were in sugar cane, and there were in addition 12,833 acres in villages, and 92 cattle farms. In 1888 Dutch Guiana had in cacao plantations 21,712 acres, and in sugar 4,120. This area was divided into 470 large and small properties. The whole area definitely reported in the two colonies as under cultivation was therefore only 120,325 acres, including village areas, or 188 square miles, or a little over one-thousandth part. There was, however, some land in Dutch Guiana devoted to bananas, rice, coffee, cotton, fruit, etc., not specifically accounted for. The field and forest productions of the Guianas, it has been stated, are those of the tropics in all their varieties. The principal articles are shown under the classification of exports.

#### FOREIGN COMMERCE.

The trade of French and Dutch Guiana is not separately stated in the commercial reports of the home governments. In the first it is unimportant and in the last the exports are nearly all of cane products. The American consul states the production of sugar to have been as follows in Dutch Guiana for three years: In 1884, 16,181,172 pounds; 1885, 11,976,016 pounds; 1886, 15,395,751 pounds. The amounts exported to various countries in 1886 were as follows, according to the same authority: \*

| Destination.           | Muscovado.     | Vacuum pan.    | Total.         |
|------------------------|----------------|----------------|----------------|
|                        | <i>Pounds.</i> | <i>Pounds.</i> | <i>Pounds.</i> |
| Holland .....          | 815, 762       | 928, 084       | 1, 743, 846    |
| Great Britain .....    | 285, 186       | 5, 773, 792    | 6, 058, 978    |
| North America .....    | 2, 435, 202    | 496, 786       | 2, 931, 988    |
| All other places ..... | 32, 634        | 705            | 33, 339        |
| Total .....            | 3, 568, 784    | 7, 199, 367    | 10, 768, 151   |

Of the amount destined for North America, according to our own official reports, the United States received 1,976,587 pounds, valued at \$40,837. In 1886 363,000 pounds of sugar, 263,000 refined, were imported into Dutch Guiana. At the rate per pound of the sugar imported from that colony into the United States, according to the amount and value above given from our Treasury report, the total value of the sugar shipped, as per the foregoing table, was only \$2,224,700. In 1888 the trade with this country had fallen to a low figure, which now is

\* No. 86, Consular Reports.



gradually increasing, but still cacao leads sugar in an increasing amount in the exports to us.

The British consular reports for 1891 state the total exports of Dutch Guiana in 1890 at \$1,721,816, the imports at \$2,173,763, and the total trade at \$3,895,579, and that this was an increase over the previous year. Imports from the United States were mostly of provisions and lumber.

Relative to the foreign trade of British Guiana, the following table from the British trade reports shows the value by leading articles for a series of years:

## IMPORTS.

| Articles.                | 1885.     | 1887.     | 1889.     |
|--------------------------|-----------|-----------|-----------|
| Butter .....             | \$123,337 | \$112,942 | \$92,264  |
| Coals .....              | 255,652   | 448,540   | 425,867   |
| Flour .....              | 622,450   | 547,068   | 668,151   |
| Fish, dried .....        | 251,710   | 248,279   | 302,979   |
| Lumber .....             | 123,921   | 160,658   | 187,545   |
| Machinery .....          | 224,779   | 308,429   | 682,493   |
| Malt liquor .....        | 103,306   | 128,656   | 123,974   |
| Manure .....             | 345,896   | 338,621   | 440,754   |
| Oils .....               | 161,592   | 160,784   | 168,760   |
| Opium .....              | 55,726    | 47,195    | 39,340    |
| Pork .....               | 279,181   | 226,409   | 276,850   |
| Rice .....               | 1,086,616 | 993,039   | 985,870   |
| Spirits, brandy .....    | 53,313    | 53,945    | 50,003    |
| All other articles ..... | 3,453,536 | 4,027,291 | 4,333,231 |
| Total .....              | 7,141,015 | 7,801,856 | 8,778,081 |

## EXPORTS.

|                          |           |            |            |
|--------------------------|-----------|------------|------------|
| Molasses .....           | \$168,434 | \$218,579  | \$326,440  |
| Rice .....               | 222,292   | 145,980    | 223,212    |
| Rum .....                | 1,007,696 | 680,526    | 815,737    |
| Sugar, raw .....         | 6,752,532 | 8,772,786  | 9,346,342  |
| All other articles ..... | 612,751   | 842,645    | 1,314,364  |
| Total .....              | 8,763,705 | 10,660,516 | 12,026,095 |

The following table, from the same source, with amounts reduced in all cases from pounds sterling to dollars, shows the distribution of this trade:

## IMPORTS.

| Countries.                    | 1885.       | 1887.       | 1889.       |
|-------------------------------|-------------|-------------|-------------|
| United Kingdom .....          | \$3,526,611 | \$4,459,738 | \$5,114,779 |
| British Possessions:          |             |             |             |
| West Indies .....             | 242,415     | 158,536     | 329,628     |
| Other Possessions .....       | 1,398,184   | 1,289,301   | 1,111,158   |
| United States .....           | 1,680,607   | 1,542,783   | 1,953,754   |
| Other foreign countries ..... | 293,197     | 351,498     | 268,762     |
| Total .....                   | 7,141,014   | 7,801,856   | 8,778,081   |

## EXPORTS.

|                               |             |             |             |
|-------------------------------|-------------|-------------|-------------|
| United Kingdom .....          | \$6,295,368 | \$5,586,684 | \$6,410,407 |
| British Possessions:          |             |             |             |
| West Indies .....             | 313,583     | 155,266     | 291,761     |
| Other Possessions .....       | 118,558     | 234,755     | 229,713     |
| United States .....           | 1,500,717   | 3,960,226   | 4,296,175   |
| Other foreign countries ..... | 535,480     | 723,585     | 798,038     |
| Total .....                   | 8,763,706   | 10,660,516  | 12,026,094  |



The following table shows the commerce of the Guianas, separate and total, with the United States, according to the official reports of this country, for the years named ending June 30:

| Year.         | French<br>Guiana. | Dutch<br>Guiana. | British<br>Guiana. | The three<br>colonies. |
|---------------|-------------------|------------------|--------------------|------------------------|
| 1888.         |                   |                  |                    |                        |
| Imports.....  | \$140,086         | \$264,096        | \$1,651,711        | \$2,055,893            |
| Exports ..... | 12,424            | 430,983          | 2,822,382          | 3,265,789              |
| Total .....   | 152,510           | 695,079          | 4,474,093          | 5,321,682              |
| 1889.         |                   |                  |                    |                        |
| Imports.....  | 140,768           | 254,626          | 1,643,249          | 2,038,643              |
| Exports ..... | 13,366            | 460,243          | 4,526,181          | 4,999,790              |
| Total .....   | 154,134           | 714,869          | 6,169,430          | 7,038,433              |
| 1890.         |                   |                  |                    |                        |
| Imports.....  | 154,859           | 273,203          | 2,011,122          | 2,439,184              |
| Exports ..... | 17,647            | 574,114          | 4,326,975          | 4,918,736              |
| Total .....   | 172,506           | 847,317          | 6,338,097          | 7,357,920              |

Nearly all the values in the imports shown above were in field and forest products, and of the exports, in sugar, especially from British Guiana. The decrease of exportation of coffee and increase of that of cacao from Dutch Guiana to the United States keep pace with similar changes in production there.

#### CONCLUSION.

The naturally fertile and considerable region of the three Guianas has been and is likely to be slower in development than others of South America not dependent upon foreign centers of government. Larger than either Ecuador, Paraguay or Uruguay; more accessible by thousands of miles to the trade of Europe and North America than either of those countries, and possessing equal though partially dissimilar advantages for soil production; still, divided and dependent, it exhibits none of the enterprise of the age or of adjacent nations. Under such conditions, which are likely to continue indefinitely, with so little to offer to progressive people, it is doubtful that industrial enterprises could continue there without Asiatic and convict labor, and the remnant from times of slavery by which it dubiously profits. In the new world the three Guianas are political and social anomalies.



## EUROPEAN CROP REPORT FOR DECEMBER.

## SUMMARY.

General favorable condition of autumn sowings.

## GREAT BRITAIN.

Seasonable weather has been the characteristic of the month.

This year's crop of hops is put at 436,716 cwt., from 56,142 acres, as compared with 283,629 cwt. from 53,961 acres last year, the average yield per acre being 7.78 cwt., against 5.26 cwt. in 1890. The total is greater than was expected at the end of harvest, but not so high as was anticipated in July.

## FRANCE.

There have been some sharp frosts towards the end of the month, followed by milder weather. In all the departments the situation is considered as excellent. The sowings have been completed with the exception of the northern belt, which will be finished about December 10. The wheat area is much larger than last year.

## GERMANY.

The weather during the month has been favorable. During the first part there was some little complaint in eastern Russia of premature winter weather, but on the whole the month has been mild and wet. The young crops promise well.

Beerbohm's contains this note on the German crops:

The preliminary official estimates of the crops in Germany are now given as follows: Wheat, 15,343,000 quarters; rye, 28,890,000 quarters. Last year the preliminary official estimate was as follows: Wheat, 16,264,000 quarters; rye, 32,075,000 quarters; but the final outturn was found to be much smaller, viz, wheat, 15,118,000 quarters, and rye, 26,895,000 quarters. It is not unusual in Germany, as in France, for the final estimates of the crops to be much smaller than the early ones, but this year, according to the expressed view of several correspondents, the Government has intentionally given a rosy view of matters in order to meet the cry for an abolition of the import duties. The reports of reliable merchants, especially in the South, are to the effect that supplies of home-grown wheat and rye since harvest have seldom been so small as this year, and that the crops are much worse than the official estimate now puts forth. The average yield in the ten years ended 1890, was 26,600,000 quarters rye and 13,450,000 quarters wheat, so that the official estimate makes the present crop 13 per cent. above an average for wheat, and  $7\frac{1}{2}$  per cent. above an average for rye, which is commercially considered to have been impossible.

## AUSTRIA-HUNGARY.

Following the drought of October, which caused some uneasiness, there were some days of severe winter weather, which, as in Germany, has been succeeded by three weeks of damp and mild temperature. The present prospect is all that could be desired.



## ITALY.

The germination of the grain, new sowings, is satisfactory. A more genial period has followed the cold weather which visited the northern provinces during the first two weeks of the month. Prices for all agricultural produce have been well maintained.

## SPAIN.

Reports from all parts of Spain speak in high terms of the favorable conditions in which the autumn sowings have been made.

## SWEDEN.

The wheat crop of 1891 is returned as having yielded 551,000 quarters, against a yield of 478,000 quarters last year. The rye crop also exceeds expectations.

## RUSSIA.

The condition of the autumn sowings is reported on the 15th of November as being satisfactory in twenty-nine governments, moderate in fourteen, and inferior in eight. Later news puts a more serious aspect on the situation as affected by the weather, to say nothing of the effects of the disorganization in the famine districts. The later the intelligence the worse appears the terrible state in which vast areas are placed. The effect of the ukase prohibiting the export of wheat had been so thoroughly discounted in the chief grain centers of the continent and Great Britain that prices remained stationary where they did not recede.

The following account of the European Russian crops (excluding Poland) was issued by the board of agriculture and rural industry November 13 (in chetwerts):

| Crops,                 | Five years' average, 1183-'87. | Probable crop, 1891. | Final yield of 1890 crop. |
|------------------------|--------------------------------|----------------------|---------------------------|
| Winter wheat.....      | 12,600,000                     | 10,500,000           | 12,100,000                |
| Spring wheat.....      | 29,500,000                     | 20,200,000           | 21,100,000                |
| Total.....             | 42,100,000                     | 30,700,000           | 33,200,000                |
| Rye.....               | 118,700,000                    | 90,100,000           | 113,500,000               |
| Barley.....            | 26,200,000                     | 23,300,000           | 22,000,000                |
| Buckwheat.....         | 10,500,000                     | 6,200,000            | 6,500,000                 |
| Millet.....            | 8,650,000                      | 6,300,000            | *8,000,000                |
| Pease.....             | 2,400,000                      | 2,000,000            | *2,300,000                |
| Maize.....             | 3,900,000                      | 4,800,000            | 4,700,000                 |
| Total breadstuffs..... | 212,450,000                    | 163,400,000          | 190,200,000               |
| Oats.....              | 95,300,000                     | 73,300,000           | 85,000,000                |

\* Estimated.

E. J. M.



## TRANSPORTATION RATES.

## ERIE CANAL RATES.

The returns of the daily rates of freight, Buffalo to New York, via Erie Canal, for the month of November, show that the rates were not as high as during the month of October. The average rate on corn for October was 4.1 cents per bushel, wheat 4.4 cents, and oats 2.8 cents. For November the averages were 3.7, 4.1, and 2.8 cents, respectively. The season of navigation was one day longer than that of 1890, and it has been one of fairly good rates throughout. Of the entire receipts at Buffalo of grain, including flour, from May 5 to November 30, the season of navigation, nearly 25 per cent was shipped by canal. The opening rates were  $1\frac{7}{8}$  cents on oats,  $2\frac{3}{8}$  on corn, and 3 cents on wheat, and the closing rates were  $2\frac{3}{4}$ ,  $3\frac{3}{4}$ , and  $4\frac{1}{4}$  cents, respectively. For comparison, the following statement showing the opening, highest, lowest, and closing rates upon oats, corn, and wheat from Buffalo to New York for the four seasons of navigation, 1888 to 1891, inclusive, is presented:

|               | In cents per bushel. |                |                |               | In cents per bushel. |                |                |
|---------------|----------------------|----------------|----------------|---------------|----------------------|----------------|----------------|
|               | Oats.                | Corn.          | Wheat.         |               | Oats.                | Corn.          | Wheat.         |
| 1888.         |                      |                |                | 1890.         |                      |                |                |
| Opening ..... | 3                    | $3\frac{3}{4}$ | 5              | Opening ..... | $2\frac{5}{8}$       | $3\frac{5}{8}$ | 4              |
| Highest ..... | $3\frac{1}{4}$       | $4\frac{1}{4}$ | 5              | Highest ..... | $2\frac{3}{4}$       | $3\frac{3}{4}$ | $4\frac{1}{4}$ |
| Lowest .....  | $1\frac{1}{8}$       | $1\frac{7}{8}$ | 2              | Lowest .....  | 2                    | 2              | 3              |
| Closing ..... | $2\frac{1}{4}$       | $3\frac{1}{2}$ | $4\frac{1}{4}$ | Closing ..... | 2                    | $2\frac{1}{2}$ | 3              |
| 1889.         |                      |                |                | 1891.         |                      |                |                |
| Opening ..... | $2\frac{3}{4}$       | $3\frac{5}{8}$ | 4              | Opening ..... | $1\frac{7}{8}$       | $2\frac{3}{8}$ | 3              |
| Highest ..... | $3\frac{1}{4}$       | $4\frac{1}{2}$ | 5              | Highest ..... | $3\frac{3}{8}$       | $4\frac{1}{4}$ | $4\frac{3}{4}$ |
| Lowest .....  | $1\frac{1}{2}$       | $1\frac{3}{4}$ | 2              | Lowest .....  | $1\frac{1}{2}$       | $1\frac{7}{8}$ | $2\frac{1}{2}$ |
| Closing ..... | $2\frac{1}{2}$       | 3              | $2\frac{1}{2}$ | Closing ..... | $2\frac{3}{4}$       | $3\frac{3}{4}$ | $4\frac{1}{4}$ |

## NAVIGATION VIA ERIE CANAL CLOSED.

The Erie Canal, Buffalo to New York, was officially closed November 30, which was eight days later than last year, but the season of navigation was only one day longer than that of 1890. In 1890 the canal was open two hundred and nine days, and this year two hundred and ten days.

The following statement shows the official date of opening and closing the canal, and the number of days open from 1877 to 1891, inclusive:

| Year.     | Canal opened. | Canal closed. | No. of days open. | Year.     | Canal opened. | Canal closed. | No. of days open. |
|-----------|---------------|---------------|-------------------|-----------|---------------|---------------|-------------------|
| 1877..... | May 8         | Dec. 7        | 213               | 1885..... | May 11        | Dec. 1        | 204               |
| 1878..... | Apr. 15       | Dec. 7        | 237               | 1886..... | May 1         | Dec. 1        | 214               |
| 1879..... | May 8         | Dec. 6        | 212               | 1887..... | May 7         | Dec. 1        | 208               |
| 1880..... | Apr. 20       | Nov. 20       | 215               | 1888..... | May 10        | Dec. 3        | 207               |
| 1881..... | May 18        | Dec. 6        | 204               | 1889..... | May 1         | Nov. 30       | 213               |
| 1882..... | Apr. 11       | Dec. 7        | 241               | 1890..... | Apr. 28       | Nov. 22       | 209               |
| 1883..... | May 7         | Dec. 1        | 208               | 1891..... | May 5         | Nov. 30       | 210               |
| 1884..... | May 7         | Dec. 1        | 208               |           |               |               |                   |



## THE TRANS-MISSOURI FREIGHT ASSOCIATION.

[Rates in effect December 3, 1891.]

| Articles.                                                                                         | To Denver, Colorado Springs, Pueblo, Trinidad, Colo., and points taking Denver rates from— |                      |                                                                            |                                 |                                                                                                              |
|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------|----------------------------------------------------------------------------|---------------------------------|--------------------------------------------------------------------------------------------------------------|
|                                                                                                   | Chicago, Ill.; Milwaukee, Wis.; Cairo, Ill.; Columbus, Ky., and Memphis, Tenn.             | Peoria, Ill.         | St. Louis, Mo.; East St. Louis, Ill.; Carondelet, Mo., and Du-buque, Iowa. | St. Paul and Minneapolis, Minn. | Council Bluffs, Iowa; Nebraska City, Nebr.; Atchison and Leavenworth, Kans.; Kansas City and St. Joseph, Mo. |
| Agricultural implements:<br>Except hand, mixed C. L., (minimum weight, 20,000 lbs.) per 100 lbs.. | \$1.15                                                                                     | \$1.11 $\frac{1}{4}$ | \$1.07 $\frac{1}{2}$                                                       | \$1.07                          | \$0.85                                                                                                       |
| O. R., N. O. S., K. D. flat in bundles, L. C. L.....do..                                          | 2.32                                                                                       | 2.22                 | 2.12                                                                       | 2.15                            | 1.60                                                                                                         |
| Apples, in barrels or boxes, O. R., P. P. or guaranteed:                                          |                                                                                            |                      |                                                                            |                                 |                                                                                                              |
| C. L.....do..                                                                                     | 1.00                                                                                       | .97 $\frac{1}{2}$    | .95                                                                        | .93                             | .75                                                                                                          |
| L. C. L.....do..                                                                                  | 1.52                                                                                       | 1.47                 | 1.42                                                                       | 1.42                            | 1.10                                                                                                         |
| Bacon, hams or shoulders, packed, C. L.....do..                                                   | .82                                                                                        | .78 $\frac{1}{2}$    | .75                                                                        | .78                             | .60                                                                                                          |
| Beans or peas, dried:                                                                             |                                                                                            |                      |                                                                            |                                 |                                                                                                              |
| In barrels or in bulk, C. L.....do..                                                              | 1.00                                                                                       | .97 $\frac{1}{2}$    | .95                                                                        | .93                             | .75                                                                                                          |
| In barrels, L. C. L.....do..                                                                      | 1.20                                                                                       | 1.17 $\frac{1}{2}$   | 1.15                                                                       | 1.15                            | .90                                                                                                          |
| Beef, pickled, C. L.....do..                                                                      | .82                                                                                        | .78 $\frac{1}{2}$    | .75                                                                        | .78                             | .60                                                                                                          |
| Butter, in wood or tin, O. R., C. L.....do..                                                      | 1.52                                                                                       | 1.47                 | 1.42                                                                       | 1.42                            | 1.10                                                                                                         |
| Cheese, in boxes or casks, C. L.....do..                                                          | 1.52                                                                                       | 1.47                 | 1.42                                                                       | 1.42                            | 1.10                                                                                                         |
| Canned goods, in mixed C. L.....do..                                                              | 1.00                                                                                       | .97 $\frac{1}{2}$    | .95                                                                        | .93                             | .75                                                                                                          |
| Flour, C. L.....do..                                                                              | .55                                                                                        | .52 $\frac{1}{2}$    | .50                                                                        | .55                             | .35                                                                                                          |
| Oatmeal, C. L.....do..                                                                            | .55                                                                                        | .52 $\frac{1}{2}$    | .50                                                                        | .55                             | .35                                                                                                          |
| Corn meal, C. L.....do..                                                                          | .50                                                                                        | .47 $\frac{1}{2}$    | .45                                                                        | .45                             | .30                                                                                                          |
| Wheat, C. L.....do..                                                                              | .55                                                                                        | .52 $\frac{1}{2}$    | .50                                                                        | .55                             | .35                                                                                                          |
| Rye, barley, or oats, C. L.....do..                                                               | .50                                                                                        | .47 $\frac{1}{2}$    | .45                                                                        | .45                             | .30                                                                                                          |
| Corn, C. L.....do..                                                                               | .49                                                                                        | .46 $\frac{1}{2}$    | .44                                                                        | .45                             | .30                                                                                                          |
| Broom corn, C. L. (minimum weight, 12,000 pounds).....do..                                        | .65                                                                                        | .62 $\frac{1}{2}$    | .60                                                                        | .65                             | .45                                                                                                          |
| Fruits, tropical, straight or mixed, C. L.....do..                                                | .90                                                                                        | .85 $\frac{3}{4}$    | .81 $\frac{1}{2}$                                                          | .90                             | .56 $\frac{1}{2}$                                                                                            |
| Fruit, C. L., by passenger train.....do..                                                         | 1.80                                                                                       | 1.71 $\frac{1}{2}$   | 1.63                                                                       | 1.80                            | 1.13                                                                                                         |
| Grapes, C. L.....do..                                                                             | 1.14                                                                                       | 1.09                 | 1.04                                                                       | 1.04                            | .72                                                                                                          |
| Lard or tallow, C. L.....do..                                                                     | .82                                                                                        | .78 $\frac{1}{2}$    | .75                                                                        | .78                             | .60                                                                                                          |
| Meat, fresh, O. R., P. P., or guaranteed C. L.....do..                                            | .83 $\frac{1}{2}$                                                                          | .81                  | .78 $\frac{1}{2}$                                                          | .83 $\frac{1}{2}$               | .60                                                                                                          |
| Oil cake or oil meal, straight, C. L.....do..                                                     | .50                                                                                        | .47 $\frac{1}{2}$    | .45                                                                        | .45                             | .30                                                                                                          |
| Oil cake and oil meal, mixed, C. L.....do..                                                       | .60                                                                                        | .57 $\frac{1}{2}$    | .55                                                                        | .55                             | .30                                                                                                          |
| Potatoes, sweet, C. L.....do..                                                                    | .70                                                                                        | .67 $\frac{1}{2}$    | .65                                                                        | .65                             | .50                                                                                                          |
| Pork, packed, C. L.....do..                                                                       | .82                                                                                        | .78 $\frac{1}{2}$    | .75                                                                        | .78                             | .60                                                                                                          |
| Salt, C. L.....do..                                                                               | .52                                                                                        | .50 $\frac{1}{2}$    | .48 $\frac{2}{3}$                                                          | .49                             | .37                                                                                                          |
| Salt, in sacks, boxes, or barrels, L. C. L.....do..                                               | 1.20                                                                                       | 1.17 $\frac{1}{2}$   | 1.15                                                                       | 1.15                            | .90                                                                                                          |
| Seed:                                                                                             |                                                                                            |                      |                                                                            |                                 |                                                                                                              |
| Flax, millet, hemp, Hungarian or broom corn, C. L.....do..                                        | .55                                                                                        | .52 $\frac{1}{2}$    | .50                                                                        | .55                             | .35                                                                                                          |
| Sorghum, C. L.....do..                                                                            | .50                                                                                        | .47 $\frac{1}{2}$    | .45                                                                        | .45                             | .30                                                                                                          |
| Garden and osage orange, O. R. of waste, C. L.....do..                                            | 1.52                                                                                       | 1.47                 | 1.42                                                                       | 1.42                            | 1.10                                                                                                         |
| Tobacco, unmanufactured, in hogsheads, barrels, or boxes, L. C. L.....do..                        | per 100 pounds.                                                                            | 1.20                 | 1.17 $\frac{1}{2}$                                                         | 1.15                            | .90                                                                                                          |
| Vegetables, dried, N. O. S., in cans or boxes:                                                    |                                                                                            |                      |                                                                            |                                 |                                                                                                              |
| C. L.....do..                                                                                     | 1.00                                                                                       | .97 $\frac{1}{2}$    | .95                                                                        | .93                             | .75                                                                                                          |
| L. C. L.....do..                                                                                  | 1.20                                                                                       | 1.17 $\frac{1}{2}$   | 1.15                                                                       | 1.15                            | .90                                                                                                          |
| Poultry, in special or palace or poultry cars, C. L.....do..                                      | 1.15                                                                                       | 1.11 $\frac{1}{4}$   | 1.07 $\frac{1}{2}$                                                         | 1.07                            | .85                                                                                                          |
| Horses or mules, released.....do..                                                                | per standard car.                                                                          | 105.00               | 105.00                                                                     | 87.50                           | 105.00                                                                                                       |
| Cattle, released.....do..                                                                         | 95.00                                                                                      | 95.00                | 77.50                                                                      | 95.00                           | 65.00                                                                                                        |
| Hogs, released:                                                                                   |                                                                                            |                      |                                                                            |                                 |                                                                                                              |
| In single-deck cars.....do..                                                                      | 95.00                                                                                      | 95.00                | 80.00                                                                      | 95.00                           | 65.00                                                                                                        |
| In double-deck cars.....do..                                                                      | 177.50                                                                                     | 170.85               | 158.50                                                                     | 168.00                          | 130.00                                                                                                       |
| Sheep, released:                                                                                  |                                                                                            |                      |                                                                            |                                 |                                                                                                              |
| In single-deck cars.....do..                                                                      | 57.00                                                                                      | 57.00                | 46.50                                                                      | 57.00                           | 39.00                                                                                                        |
| In tiered or double-deck cars.....do..                                                            | 95.00                                                                                      | 95.00                | 77.50                                                                      | 95.00                           | 65.00                                                                                                        |

C. L.—Car-load. L. C. L.—Less than car-load. O. R.—Owner's risk. N. O. S.—Not otherwise specified. P. P.—Prepaid.



## THE TRANS-MISSOURI FREIGHT ASSOCIATION.

[Rates in effect December 3, 1891.]

| Articles.                                                                                                | From Denver, Colorado Springs, Pueblo, Trinidad, Colo., and points taking Denver rates to— |              |                                                                         |                                 |                             |                                                                                                              |
|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------|-------------------------------------------------------------------------|---------------------------------|-----------------------------|--------------------------------------------------------------------------------------------------------------|
|                                                                                                          | Chicago and Cairo, Ill., Milwaukee, Wis.; Columbus, Ky., and Memphis, Tenn.                | Peoria, Ill. | St. Louis and Carondelet, Mo.; East St. Louis, Ill., and Dubuque, Iowa. | St. Paul and Minneapolis, Minn. | Galveston and Houston, Tex. | Council Bluffs, Iowa; Nebraska City, Nebr.; Atchison and Leavenworth, Kans.; Kansas City and St. Joseph, Mo. |
| Agricultural implements, except hand, mixed C. L. (minimum weight 20,000 lbs.).... per 100 pounds..      | \$1. 15                                                                                    | \$1. 11½     | \$1. 07½                                                                | \$1. 07                         | \$1. 04                     | \$0. 85                                                                                                      |
| Apples, in barrels or boxes, O. R., P. P. or guaranteed, C. L..... per 100 pounds..                      | 1. 00                                                                                      | . 97½        | . 95                                                                    | . 93                            | . 88                        | . 75                                                                                                         |
| Beans or peas, dried:                                                                                    |                                                                                            |              |                                                                         |                                 |                             |                                                                                                              |
| In barrels or in bulk, C. L..... do.....                                                                 | 1. 00                                                                                      | . 97½        | . 95                                                                    | . 93                            | . 88                        | . 75                                                                                                         |
| In barrels, L. C. L..... do.....                                                                         | 1. 20                                                                                      | 1. 17½       | 1. 15                                                                   | 1. 15                           | 1. 07                       | . 90                                                                                                         |
| Butter, in wood or tin, O. R.:                                                                           |                                                                                            |              |                                                                         |                                 |                             |                                                                                                              |
| C. L..... do.....                                                                                        | 1. 52                                                                                      | 1. 47        | 1. 42                                                                   | 1. 42                           | 1. 37                       | 1. 10                                                                                                        |
| L. C. L..... do.....                                                                                     | 1. 90                                                                                      | 1. 80        | 1. 70                                                                   | 1. 75                           | 1. 73                       | 1. 30                                                                                                        |
| Cheese, in boxes, tubs, or casks:                                                                        |                                                                                            |              |                                                                         |                                 |                             |                                                                                                              |
| C. L..... do.....                                                                                        | 1. 52                                                                                      | 1. 47        | 1. 42                                                                   | 1. 42                           | 1. 37                       | 1. 10                                                                                                        |
| L. C. L..... do.....                                                                                     | 1. 90                                                                                      | 1. 80        | 1. 70                                                                   | 1. 75                           | 1. 73                       | 1. 30                                                                                                        |
| Fertilizers, C. L..... do.....                                                                           | *. 45                                                                                      | . 42½        | . 40                                                                    | . 41                            | . 35                        | . 29                                                                                                         |
| Flour, C. L..... do.....                                                                                 | . 55                                                                                       | . 52½        | . 50                                                                    | . 52                            | . 45                        | . 35                                                                                                         |
| Oatmeal, C. L..... do.....                                                                               | . 55                                                                                       | . 52½        | . 50                                                                    | . 52                            | . 45                        | . 35                                                                                                         |
| Corn meal, C. L..... do.....                                                                             | . 50                                                                                       | . 47½        | . 45                                                                    | . 45                            | . 45                        | . 30                                                                                                         |
| Wheat, C. L..... do.....                                                                                 | . 55                                                                                       | . 52½        | . 50                                                                    | . 52                            | . 40                        | . 35                                                                                                         |
| Rye, C. L..... do.....                                                                                   | . 50                                                                                       | . 47½        | . 45                                                                    | . 45                            | . 40                        | . 30                                                                                                         |
| Barley, C. L..... do.....                                                                                | . 50                                                                                       | . 47½        | . 45                                                                    | . 45                            | . 40                        | . 30                                                                                                         |
| Oats, C. L..... do.....                                                                                  | . 50                                                                                       | . 47½        | . 45                                                                    | . 45                            |                             | . 30                                                                                                         |
| Corn, C. L..... do.....                                                                                  | . 49                                                                                       | . 46½        | . 44                                                                    | . 45                            |                             | . 30                                                                                                         |
| Broom corn, C. L..... do.....                                                                            | . 65                                                                                       | . 62½        | . 60                                                                    | . 65                            |                             | . 45                                                                                                         |
| Hides, dry, pressed in bales, and sheep pelts, C. L. (minimum weight 10,000 pounds).... per 100 pounds.. | 1. 47                                                                                      | 1. 42        | 1. 37                                                                   | 1. 47                           | 1. 30                       | . 97                                                                                                         |
| Sheep pelts:                                                                                             |                                                                                            |              |                                                                         |                                 |                             |                                                                                                              |
| Dry, in bundles, L. C. L..... do.....                                                                    | 2. 00                                                                                      | 1. 90        | 1. 80                                                                   | 1. 80                           | 1. 75                       | 1. 25                                                                                                        |
| Pressed in bales, L. C. L..... do.....                                                                   | 1. 85                                                                                      | 1. 75        | 1. 65                                                                   | 1. 70                           | 1. 68                       | 1. 25                                                                                                        |
| Potatoes, Irish, C. L..... do.....                                                                       | . 50                                                                                       | . 47½        | . 45                                                                    | . 45                            | . 60                        | . 30                                                                                                         |
| Salt, in sacks, boxes, or barrels, L. C. L..... do.....                                                  | 1. 20                                                                                      | 1. 17½       | 1. 15                                                                   | 1. 15                           | 1. 07                       | . 90                                                                                                         |
| Tobacco, manufactured, in hogsheads, barrels, or boxes, L. C. L..... per 100 pounds..                    | 1. 20                                                                                      | 1. 17½       | 1. 15                                                                   | 1. 15                           | 1. 07                       | . 90                                                                                                         |
| Vegetables:                                                                                              |                                                                                            |              |                                                                         |                                 |                             |                                                                                                              |
| N. O. S., O. R., L. C. L..... do.....                                                                    | 2. 32                                                                                      | 2. 22        | 2. 12                                                                   | 2. 15                           | 2. 07                       | 1. 60                                                                                                        |
| Dried, N. O. S., in cans or boxes, C. L..... do.....                                                     | 1. 00                                                                                      | . 97½        | . 95                                                                    | . 93                            | . 88                        | . 75                                                                                                         |
| Dried, N. O. S., in cans or boxes, L. C. L..... do.....                                                  | 1. 20                                                                                      | 1. 17½       | 1. 15                                                                   | 1. 15                           | 1. 07                       | . 90                                                                                                         |
| Wool:                                                                                                    |                                                                                            |              |                                                                         |                                 |                             |                                                                                                              |
| In sacks, any quantity..... do.....                                                                      | 1. 85                                                                                      | 1. 75        | 1. 65                                                                   | 1. 70                           | 1. 68                       | 1. 25                                                                                                        |
| Compressed, in bales or sacks, any quantity..... do.....                                                 | 1. 50                                                                                      | 1. 45        | 1. 40                                                                   | 1. 42                           | 1. 36                       | 1. 10                                                                                                        |
| Not compressed, in bales or sacks, in lots of 10,000 pounds..... per 100 pounds..                        | 1. 65                                                                                      |              | 1. 53                                                                   |                                 |                             |                                                                                                              |
| Seed:                                                                                                    |                                                                                            |              |                                                                         |                                 |                             |                                                                                                              |
| Flax, millet, hemp, Hungarian, or broom corn, C. L..... per 100 pounds..                                 | . 55                                                                                       | . 52½        | . 50                                                                    | . 55                            |                             | . 35                                                                                                         |
| Sorghum, C. L..... do.....                                                                               | . 50                                                                                       | . 47½        | . 45                                                                    | . 45                            |                             | . 30                                                                                                         |
| Garden and Osage orange, O., R of waste C. L..... do.....                                                | 1. 52                                                                                      | 1. 47        | 1. 42                                                                   | 1. 42                           | 1. 37                       | 1. 10                                                                                                        |
| Horses and mules, released..... per standard car..                                                       | 105. 00                                                                                    | 105. 00      | 87. 50                                                                  | 105. 00                         |                             | 75. 00                                                                                                       |
| Cattle, released..... do.....                                                                            | 95. 00                                                                                     | 95. 00       | 77. 50                                                                  | 95. 00                          |                             | 65. 00                                                                                                       |
| Hogs, released:                                                                                          |                                                                                            |              |                                                                         |                                 |                             |                                                                                                              |
| In single-deck cars..... do.....                                                                         | 95. 00                                                                                     | 95. 00       | 80. 00                                                                  | 95. 00                          |                             | 65. 00                                                                                                       |
| In double-deck cars..... do.....                                                                         | 177. 50                                                                                    | 170. 85      | 158. 50                                                                 | 168. 00                         |                             | 130. 00                                                                                                      |
| Sheep released:                                                                                          |                                                                                            |              |                                                                         |                                 |                             |                                                                                                              |
| In single-deck cars..... do.....                                                                         | 57. 00                                                                                     | 57. 00       | 46. 50                                                                  | 57. 00                          |                             | 39. 00                                                                                                       |
| In tiered or double-deck cars..... do.....                                                               | 95. 00                                                                                     | 95. 00       | 77. 50                                                                  | 95. 00                          |                             | 65. 00                                                                                                       |

\* Rate to Memphis, 40 cents. C. L.—Car-load. L. C. L.—Less than car-load. O. R.—Owner's risk. P. P.—Prepared. N. O. S.—Not otherwise specified.



## OCEAN STEAMSHIP COMPANIES.

[Rates in effect December 1, 1891.]

| Articles.                                      | White Star<br>Line,<br>New York<br>to<br>Liverpool. | InmanLine,<br>New York<br>to<br>Liverpool. | Guion Line,<br>New York<br>to<br>Liverpool. | Anchor<br>Line,<br>New York<br>to<br>Glasgow. |
|------------------------------------------------|-----------------------------------------------------|--------------------------------------------|---------------------------------------------|-----------------------------------------------|
| Wheat.....per bushel..                         | \$0.11                                              | \$0.12                                     | \$0.11                                      | \$0.13 to \$0.14                              |
| Corn.....do.....                               | .11                                                 | .12                                        | .11                                         | .13 to .14                                    |
| Flour.....per barrel..                         | .72                                                 | .72                                        | .72                                         | .72                                           |
| Flour, in sacks.....per 2,240 pounds..         | 4.80                                                | 5.40                                       | -----                                       | 5.40                                          |
| Bacon.....do.....                              | 8.40                                                | 8.40                                       | 8.40                                        | 7.20                                          |
| Lard.....do.....                               | 7.20                                                | 8.40                                       | 7.20                                        | 7.20                                          |
| Cheese.....do.....                             | 9.60                                                | 9.60                                       | 9.60                                        | 9.60                                          |
| Tallow.....do.....                             | 7.20                                                | 7.20                                       | 7.20                                        | 6.60                                          |
| Beef.....per tierce..                          | 1.22                                                | 1.44                                       | 1.44                                        | 1.44                                          |
| Pork.....per barrel..                          | .96                                                 | .96                                        | .96                                         | .96                                           |
| Oil cake.....per 2,240 pounds..                | 4.80                                                | 5.40                                       | -----                                       | 5.40                                          |
| Cotton.....per pound..                         | .00 $\frac{3}{8}$                                   | .00 $\frac{7}{16}$                         | .00 $\frac{7}{16}$                          | -----                                         |
| Hops.....do.....                               | .01 $\frac{1}{8}$                                   | .01 $\frac{1}{8}$                          | .01 $\frac{1}{8}$                           | .01                                           |
| Tobacco.....per hogshead..                     | 7.20                                                | 8.40                                       | -----                                       | 7.20                                          |
| Rosin.....per 280 pounds..                     | -----                                               | .84                                        | -----                                       | .72                                           |
| Lard, in small packages.....per 2,240 pounds.. | 9.60                                                | 9.60                                       | 9.60                                        | 8.40                                          |
| Tobacco, in cases.....per 40 cubic feet..      | 4.80                                                | 4.80                                       | 5.40                                        | 4.80                                          |
| Apples.....per barrel..                        | .72                                                 | .72                                        | .72                                         | .84                                           |
| Hams.....per 2,240 pounds..                    | 8.40                                                | 8.40                                       | 8.40                                        | 7.20                                          |
| Butter.....do.....                             | 10.80                                               | 10.80                                      | 10.80                                       | 9.60                                          |
| Cattle.....per head..                          | 13.20                                               | -----                                      | -----                                       | 12.00                                         |
| Measurement per ton of 40 cubic feet.....      | 4.80 to 7.20                                        | 4.80 to 6.00                               | 4.80                                        | 4.80 to 6.00                                  |
| Primage.....per cent..                         | 5                                                   | 5                                          | 5                                           | 5                                             |

| Articles.                                    | North German<br>Lloyd Steamship<br>Company, New<br>York to Bremen. | General Trans-<br>atlantic Com-<br>pany, New<br>York to Havre. |
|----------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------------------|
| Wheat.....per 100 pounds..                   | \$0.25                                                             | *\$0.12                                                        |
| Corn.....do.....                             | .25                                                                | *.12                                                           |
| Flour.....per barrel..                       | .72                                                                | 1.00                                                           |
| Flour, in sacks.....per 100 pounds..         | .30                                                                | .30 to .35                                                     |
| Bacon.....do.....                            | .36                                                                | -----                                                          |
| Lard.....do.....                             | .36                                                                | .40 to .50                                                     |
| Cheese.....do.....                           | .42                                                                | -----                                                          |
| Tallow.....do.....                           | .36                                                                | .40 to .50                                                     |
| Beef.....per tierce..                        | 1.50                                                               | 1.25                                                           |
| Pork.....per barrel..                        | 1.15                                                               | 1.10                                                           |
| Oil cake.....per 100 pounds..                | .30                                                                | -----                                                          |
| Cotton.....per pound..                       | †.00 $\frac{1}{2}$                                                 | .00 $\frac{1}{2}$                                              |
| Hops.....do.....                             | †.01                                                               | -----                                                          |
| Tobacco.....per hogshead..                   | 7.00                                                               | 8.00 to 10.00                                                  |
| Rosin.....per 280 pounds..                   | .75                                                                | -----                                                          |
| Lard, in small packages.....per 100 pounds.. | .42                                                                | .50 to .70                                                     |
| Tobacco, in cases.....per case..             | 2.00                                                               | †10.00                                                         |
| Apples.....per barrel..                      | 1.00                                                               | .90 to 1.00                                                    |
| Hams.....per 100 pounds..                    | .36                                                                | -----                                                          |
| Butter.....do.....                           | .60                                                                | -----                                                          |
| Measurement per ton of 40 cubic feet.....    | 4.80 to 10.00                                                      | 8.00 to 10.00                                                  |
| Primage.....per cent..                       | -----                                                              | 5                                                              |

\* Per bushel.

† And 5 per cent primage.

‡ Per 40 cubic feet.



## OCEAN STEAMSHIP COMPANIES.

[Rates in effect December 1, 1891.]

| Articles.                                         | Hansa-Johnston Line, Boston to— |                   |                     |
|---------------------------------------------------|---------------------------------|-------------------|---------------------|
|                                                   | Ham-burg.                       | Antwerp.          | Rotter-dam.         |
| Wheat, corn, and rye.....per bushel..             | \$0.14 $\frac{1}{2}$            | \$0.14            | \$0.15              |
| Oats.....per quarter..                            | 1.08                            | 1.08              | 1.20                |
| Barley.....do.....                                | 1.14                            | 1.14              | 1.32                |
| Flour, in barrels.....per ton..                   | 6.30                            | 6.30              | 6.60                |
| Flour, in sacks.....do.....                       | 6.00                            | 6.00              | 6.30                |
| Corn meal and oat meal.....do.....                | 6.30                            | 6.30              | 6.60                |
| Clover seed.....do.....                           | 6.60                            | 6.60              | 6.60                |
| Beef, canned.....do.....                          | 7.80                            | 7.20              | 7.80                |
| Beef, fresh.....per 40 cubic feet..               | 4.80                            | 4.80              | 4.80                |
| Beef, in barrels.....per barrel..                 | 1.20                            | 1.20              | 1.20                |
| Tallow, pork, bacon, hams, and lard.....per ton.. | 7.80                            | 7.20              | 7.80                |
| Lard, in small packages.....do.....               | 9.00                            | 8.40              | 9.00                |
| Butter.....do.....                                | 9.00                            | 8.40              | 9.00                |
| Cheese.....do.....                                | 9.00                            | 8.40              | 9.00                |
| Oil cake.....do.....                              | 6.00                            | 6.00              | 6.00                |
| Cotton.....per pound..                            | .00 $\frac{15}{32}$             | .00 $\frac{3}{8}$ | .00 $\frac{15}{32}$ |
| Hops.....do.....                                  | .01                             | .01               | .01                 |
| Lumber.....per ton..                              | 7.20                            | 7.20              | 7.80                |
| Tobacco, in cases or hogsheads.....do.....        | 12.00                           | 12.00             | 13.20               |
| Apples, green, in barrels.....per barrel..        | .84                             | .84               | .84                 |
| Apples, dried.....do.....                         | .84                             | .84               | .84                 |
| Cattle.....per head..                             | 14.40                           | 14.40             | 14.40               |
| Measurement per ton of 40 cubic feet.....         | 4.80                            | 4.80              | 4.80                |
| Primage.....per cent..                            | 5                               | 5                 | 5                   |

| Articles.                                        | Johnston Line, Boston to London. | Cunard Line, Boston to Liverpool. |
|--------------------------------------------------|----------------------------------|-----------------------------------|
|                                                  |                                  |                                   |
| Wheat and corn.....per bushel..                  | \$0.13                           | \$0.10                            |
| Rye.....do.....                                  | .13                              | .....                             |
| Oats.....per 320 pounds..                        | .96                              | .....                             |
| Barley.....per 400 pounds..                      | 1.08                             | .....                             |
| Flour:                                           |                                  |                                   |
| In barrels.....per ton..                         | 5.70                             | *.60                              |
| In sacks.....do.....                             | 5.40                             | 4.80                              |
| Corn meal and oatmeal.....do.....                | 5.70                             | 4.80                              |
| Clover seed.....do.....                          | 6.00                             | .....                             |
| Beef, canned.....do.....                         | 7.20                             | 7.20                              |
| Beef, fresh.....per 40 cubic feet..              | 4.20                             | .....                             |
| Beef, in barrels.....per barrel..                | 1.08                             | †7.20                             |
| Tallow, pork, bacon, hams and lard.....per ton.. | 7.20                             | 7.20                              |
| Lard, in small packages.....do.....              | 8.40                             | 8.40                              |
| Butter.....do.....                               | 8.40                             | 8.40                              |
| Cheese.....do.....                               | 8.40                             | 8.40                              |
| Oil cake.....do.....                             | 5.10                             | 4.80                              |
| Cotton.....per pound..                           | .00 $\frac{3}{8}$                | .00 $\frac{15}{32}$               |
| Hops.....do.....                                 | .01                              | .....                             |
| Lumber.....per ton..                             | 7.20                             | .....                             |
| Rosin.....do.....                                | 6.00                             | .....                             |
| Tobacco, in cases or hogsheads.....do.....       | 12.00                            | .....                             |
| Apples, green, in barrels.....per barrel..       | .72                              | .60                               |
| Apples, dried.....do.....                        | .72                              | †4.80                             |
| Cattle.....per head..                            | 13.20                            | .....                             |
| Measurement.....per ton of 40 cubic feet..       | 4.20                             | 4.80                              |
| Primage.....per cent..                           | 5                                | 5                                 |

\* Per barrel.

† Per ton.

† Per 40 cubic feet.



## OCEAN STEAMSHIP COMPANIES.

[Rates in effect December 1, 1891.]

| Articles.                                                     | Warren<br>Line, Bos-<br>ton to<br>Liverpool.                     | Leyland<br>Line, Bos-<br>ton to<br>Liverpool. |
|---------------------------------------------------------------|------------------------------------------------------------------|-----------------------------------------------|
| Wheat and corn.....per 60 pounds..                            | \$0. 11                                                          | \$0. 11                                       |
| Rye.....do.....                                               | . 11                                                             | .....                                         |
| Oats.....per 32 pounds..                                      | . 11                                                             | .....                                         |
| Barley.....per 48 pounds..                                    | . 11                                                             | .....                                         |
| Flour:                                                        |                                                                  |                                               |
| In barrels.....per barrel..                                   | . 72                                                             | .....                                         |
| In sacks.....per 2,240 pounds..                               | 4. 80                                                            | 4. 80                                         |
| Corn meal and oatmeal, in sacks.....do.....                   | 4. 80                                                            | 5. 40                                         |
| Clover seed, in sacks.....do.....                             | 6. 60                                                            | .....                                         |
| Beef:                                                         |                                                                  |                                               |
| Canned.....do.....                                            | 7. 20                                                            | 6. 00                                         |
| In barrels.....per barrel..                                   | 1. 02                                                            | . 72                                          |
| Pork.....do.....                                              | 1. 02                                                            | . 72                                          |
| Tallow, bacon, hams, and lard.....per 2,240 pounds..          | 7. 20                                                            | 6. 00                                         |
| Lard, in small packages.....do.....                           | 7. 20                                                            | 6. 60 to 7. 20                                |
| Butter.....do.....                                            | 8. 40                                                            | 7. 20                                         |
| Cheese.....do.....                                            | 8. 40                                                            | 7. 20                                         |
| Oil cake.....do.....                                          | 4. 80                                                            | 4. 20                                         |
| Cotton.....per pound..                                        | . 00 $\frac{13}{4}$                                              | . 00 $\frac{3}{8}$                            |
| Hops.....do.....                                              | . 00 $\frac{3}{4}$                                               | .....                                         |
| Lumber.....per 2,240 pounds..                                 | *4. 80                                                           | 4. 80                                         |
| Rosin.....do.....                                             | 7. 20                                                            | .....                                         |
| Tobacco:                                                      |                                                                  |                                               |
| In cases.....do.....                                          | 10. 80                                                           | .....                                         |
| In hogsheads.....do.....                                      | 12. 00                                                           | .....                                         |
| Apples:                                                       |                                                                  |                                               |
| Green, in barrels.....per barrel..                            | . 72                                                             | . 66                                          |
| Dried.....per 2,240 pounds..                                  | 9. 60                                                            | .....                                         |
| Cattle.....per head..                                         | 14. 40                                                           | 14. 40                                        |
| Measurement per ton of 40 cubic feet.....                     | 4. 20                                                            | 4. 20 to 4. 80                                |
| Primage.....per cent..                                        | 5                                                                | 5                                             |
| Articles.                                                     | Allan Line<br>Royal Mail<br>Steamships,<br>Boston to<br>Glasgow. | Furness<br>Line, Bos-<br>ton to<br>London.    |
| Wheat and corn.....per bushel..                               | \$0. 13                                                          | \$0. 13                                       |
| Rye.....do.....                                               | . 13                                                             | .....                                         |
| Oats.....do.....                                              | . 13                                                             | †. 90 to . 96                                 |
| Barley.....do.....                                            | . 13                                                             | . 12 $\frac{1}{2}$                            |
| Flour:                                                        |                                                                  |                                               |
| In barrels.....per barrel..                                   | . 54                                                             | . 72                                          |
| In sacks.....per ton..                                        | 4. 80                                                            | 5. 10                                         |
| Corn meal and oatmeal.....do.....                             | 4. 80                                                            | 5. 10                                         |
| Clover seed.....do.....                                       | 7. 20                                                            | 6. 00                                         |
| Beef:                                                         |                                                                  |                                               |
| Canned.....do.....                                            | 7. 20                                                            | 6. 60                                         |
| (In barrels), tallow, pork, bacon, hams, and lard.....do..... | 7. 20                                                            | 6. 60 to 7. 20                                |
| Lard, in small packages.....do.....                           | 7. 80                                                            | 8. 40                                         |
| Butter.....do.....                                            | 7. 80                                                            | 8. 40                                         |
| Cheese.....do.....                                            | 7. 80                                                            | 8. 40                                         |
| Oil cake.....do.....                                          | 4. 80                                                            | 5. 10                                         |
| Hops.....per pound..                                          | . 01                                                             | . 01                                          |
| Lumber.....per ton..                                          | *5. 40                                                           | 7. 20                                         |
| Rosin.....do.....                                             | 6. 00                                                            | 7. 20                                         |
| Tobacco:                                                      |                                                                  |                                               |
| In cases.....do.....                                          | 9. 60                                                            | †4. 80                                        |
| In hogsheads.....do.....                                      | 10. 20                                                           | 12. 00                                        |
| Apples:                                                       |                                                                  |                                               |
| Green, in barrels.....per barrel..                            | . 84                                                             | . 72                                          |
| Dried.....do.....                                             | . 84                                                             | †4. 80                                        |
| Cattle.....per head..                                         | 13. 20                                                           | 9. 60                                         |
| Measurement per ton of 40 cubic feet.....                     | 4. 80                                                            | 3. 60 to 4. 80                                |
| Primage.....per cent..                                        | 5                                                                | 5                                             |

\* Hard wood.

† Per 320 pounds.

‡ Per 40 cubic feet.



## OCEAN STEAMSHIP COMPANIES.

[Rates in effect December 1, 1891.]

| Articles.                                                     | Atlantic<br>Transport<br>Line, Balti-<br>more to<br>London. | Allan<br>Steamship<br>Line, Balti-<br>more to<br>Liverpool. |
|---------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|
| Wheat.....per bushel..                                        | *\$0.12                                                     | *\$0.12                                                     |
| Corn.....per 480 pounds..                                     | 1.08                                                        | *†.12½                                                      |
| Rye.....do.....                                               | 1.08                                                        | .....                                                       |
| Oats.....per 320 pounds..                                     | .96                                                         | *†.20                                                       |
| Barley.....per 400 pounds..                                   | 1.08                                                        | .....                                                       |
| Flour:                                                        |                                                             |                                                             |
| In barrels.....per barrel..                                   | .72                                                         | *.72                                                        |
| In sacks.....per 100 pounds..                                 | .25                                                         | .24                                                         |
| Corn meal.....do.....                                         | .25                                                         | .24                                                         |
| Oatmeal.....do.....                                           | .27½                                                        | .24                                                         |
| Clover seed.....do.....                                       | .28                                                         | .24                                                         |
| Beef:                                                         |                                                             |                                                             |
| Canned.....do.....                                            | .28                                                         | .28                                                         |
| Fresh.....do.....                                             | .30                                                         | .....                                                       |
| (In barrels), tallow, pork, bacon, hams, and lard.....do..... | .30                                                         | .28                                                         |
| Lard, in small packages.....do.....                           | .35                                                         | .33                                                         |
| Butter.....do.....                                            | .40                                                         | .40                                                         |
| Cheese.....do.....                                            | .40                                                         | .40                                                         |
| Oil cake.....do.....                                          | .25                                                         | .24                                                         |
| Cotton.....do.....                                            | .45                                                         | .42                                                         |
| Hops.....do.....                                              | .90                                                         | .80                                                         |
| Lumber.....do.....                                            | .30                                                         | .24                                                         |
| Rosin.....per 310 pounds..                                    | .72                                                         | *.72                                                        |
| Tobacco:                                                      |                                                             |                                                             |
| In cases.....per 100 pounds..                                 | .25                                                         | .45                                                         |
| In hogsheads.....do.....                                      | .35                                                         | .45                                                         |
| Apples:                                                       |                                                             |                                                             |
| Green, in barrels.....per barrel..                            | .30                                                         | *.84                                                        |
| Dried.....per 100 pounds..                                    | .33                                                         | .30                                                         |
| Cattle.....per head..                                         | 10.80                                                       | 12.00                                                       |
| Measurement per ton of 40 cubic feet.....                     | *4.80                                                       | *4.80                                                       |

| Articles.                                  | North Ger-<br>man Lloyd<br>Steamship<br>Company,<br>Baltimore<br>to Bremen. | North<br>American<br>Transport<br>Line, Nor-<br>folk, Va., to<br>Liverpool. |
|--------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| Wheat, corn, and rye.....per 100 pounds..  | \$0.24                                                                      | \$0.21                                                                      |
| Oats.....do.....                           | .45                                                                         | .25                                                                         |
| Barley.....do.....                         | .24                                                                         | .25                                                                         |
| Flour:                                     |                                                                             |                                                                             |
| In barrels.....per barrel..                | .72                                                                         | .48                                                                         |
| In sacks.....per 100 pounds..              | .27                                                                         | .24                                                                         |
| Corn meal and oatmeal.....do.....          | .27                                                                         | .24                                                                         |
| Clover seed.....do.....                    | .30                                                                         | .25                                                                         |
| Beef:                                      |                                                                             |                                                                             |
| Canned.....do.....                         | .36                                                                         | .....                                                                       |
| In tierces.....per tierce..                | .....                                                                       | 1.44                                                                        |
| In barrels.....per 100 pounds..            | .31                                                                         | .....                                                                       |
| Tallow.....do.....                         | .31                                                                         | .30                                                                         |
| Pork.....do.....                           | .31                                                                         | †1.20                                                                       |
| Bacon, hams, and lard.....do.....          | .31                                                                         | .27                                                                         |
| Lard, in small packages.....do.....        | .36                                                                         | .32                                                                         |
| Butter and cheese.....do.....              | .42                                                                         | .48                                                                         |
| Oil cake.....do.....                       | .27                                                                         | .25                                                                         |
| Cotton.....do.....                         | .45                                                                         | .46                                                                         |
| Hops.....do.....                           | .90                                                                         | .....                                                                       |
| Lumber, hard.....do.....                   | .30                                                                         | .26                                                                         |
| Rosin.....do.....                          | .24                                                                         | .....                                                                       |
| Tobacco:                                   |                                                                             |                                                                             |
| In cases.....per case..                    | 2.50                                                                        | §.58                                                                        |
| In hogsheads.....per hogshead..            | 5.00 to 7.00                                                                | .....                                                                       |
| Apples, green, in barrels.....per barrel.. | .72                                                                         | .75                                                                         |
| Cattle.....per head..                      | 20.00                                                                       | 12.00                                                                       |
| Measurement per ton of 40 cubic feet.....  | 7.00                                                                        | 4.80                                                                        |
| Primage.....per cent..                     | .....                                                                       | 5                                                                           |

\* And 5 per cent primage.

† Per bushel.

‡ Per barrel.

§ Per 100 pounds.



## MONTHLY STATEMENT OF CANAL AND LAKE RATES.

[For November, 1891.]

| Date.           | Canal rates, Buffalo to New York. |                           |                                  |                        |              | Lake rates, Chicago to Buffalo. |                   |                    |
|-----------------|-----------------------------------|---------------------------|----------------------------------|------------------------|--------------|---------------------------------|-------------------|--------------------|
|                 | Oats, per bushel.                 | Corn and rye, per bushel. | Wheat and flax-seed, per bushel. | Lumber per 1,000 feet. |              | Oats, per bushel.               | Corn, per bushel. | Wheat, per bushel. |
|                 |                                   |                           |                                  | To Albany.             | To New York. |                                 |                   |                    |
|                 | <i>Cents.</i>                     | <i>Cents.</i>             | <i>Cents.</i>                    |                        |              | <i>Cents.</i>                   | <i>Cents.</i>     | <i>Cents.</i>      |
| November 1..... | 23 $\frac{3}{4}$                  | 33 $\frac{3}{4}$          | 41 $\frac{1}{4}$                 | \$1.75                 | \$2.25       | 24 $\frac{1}{2}$                | 23 $\frac{1}{2}$  | 3                  |
| 2.....          | 23 $\frac{3}{4}$                  | 33 $\frac{3}{4}$          | 41 $\frac{1}{4}$                 | 1.75                   | 2.25         | 24 $\frac{1}{2}$                | 23 $\frac{1}{2}$  | 3                  |
| 3.....          | 23 $\frac{3}{4}$                  | 33 $\frac{3}{4}$          | 41 $\frac{1}{4}$                 | 1.75                   | 2.25         | 24 $\frac{1}{2}$                | 23 $\frac{1}{2}$  | 3                  |
| 4.....          | 23 $\frac{3}{4}$                  | 33 $\frac{3}{4}$          | 41 $\frac{1}{4}$                 | 1.75                   | 2.25         | 3                               | 31 $\frac{1}{4}$  | 3 $\frac{1}{2}$    |
| 5.....          | 23 $\frac{3}{4}$                  | 33 $\frac{3}{4}$          | 41 $\frac{1}{4}$                 | 1.75                   | 2.25         | 31 $\frac{1}{2}$                | 31 $\frac{1}{4}$  | 4                  |
| 6.....          | 23 $\frac{3}{4}$                  | 33 $\frac{3}{4}$          | 41 $\frac{1}{4}$                 | 1.75                   | 2.25         | 31 $\frac{1}{2}$                | 31 $\frac{1}{4}$  | 4                  |
| 7.....          | 23 $\frac{3}{4}$                  | 33 $\frac{3}{4}$          | 41 $\frac{1}{4}$                 | 1.75                   | 2.25         | 31 $\frac{1}{2}$                | 31 $\frac{1}{4}$  | 4                  |
| 8.....          | 3                                 | 37 $\frac{3}{8}$          | 41 $\frac{1}{4}$                 | 1.75                   | 2.25         | 23 $\frac{3}{4}$                | 4                 | 41 $\frac{1}{4}$   |
| 9.....          | 3                                 | 37 $\frac{3}{8}$          | 41 $\frac{1}{4}$                 | 1.75                   | 2.25         | 23 $\frac{3}{4}$                | 4                 | 41 $\frac{1}{4}$   |
| 10.....         | 3                                 | 37 $\frac{3}{8}$          | 41 $\frac{1}{4}$                 | 1.75                   | 2.25         | 23 $\frac{3}{4}$                | 4                 | 41 $\frac{1}{4}$   |
| 11.....         | 3                                 | 37 $\frac{3}{8}$          | 41 $\frac{1}{4}$                 | 1.75                   | 2.25         | 23 $\frac{3}{4}$                | 4                 | 41 $\frac{1}{4}$   |
| 12.....         | 3                                 | 37 $\frac{3}{8}$          | 41 $\frac{1}{4}$                 | 1.75                   | 2.25         | 23 $\frac{3}{4}$                | 4                 | 41 $\frac{1}{4}$   |
| 13.....         | 3                                 | 37 $\frac{3}{8}$          | 41 $\frac{1}{4}$                 | 1.75                   | 2.25         | 23 $\frac{3}{4}$                | 4                 | 41 $\frac{1}{4}$   |
| 14.....         | 23 $\frac{3}{4}$                  | 31 $\frac{1}{2}$          | 4                                | 1.75                   | 2.25         | 21 $\frac{1}{2}$                | 31 $\frac{3}{4}$  | 4                  |
| 15.....         | 23 $\frac{3}{4}$                  | 31 $\frac{1}{2}$          | 33 $\frac{3}{4}$                 | 1.75                   | 2.25         | 21 $\frac{1}{2}$                | 31 $\frac{3}{4}$  | 4                  |
| 16.....         | 23 $\frac{3}{4}$                  | 31 $\frac{1}{2}$          | 33 $\frac{3}{4}$                 | 1.75                   | 2.25         | 21 $\frac{1}{2}$                | 31 $\frac{3}{4}$  | 4                  |
| 17.....         | 23 $\frac{3}{4}$                  | 31 $\frac{1}{2}$          | 33 $\frac{3}{4}$                 | 1.75                   | 2.25         | 21 $\frac{1}{2}$                | 31 $\frac{3}{4}$  | 4                  |
| 18.....         | 23 $\frac{3}{4}$                  | 31 $\frac{1}{2}$          | 33 $\frac{3}{4}$                 | 1.75                   | 2.25         | 21 $\frac{1}{2}$                | 31 $\frac{3}{4}$  | 4                  |
| 19.....         | 23 $\frac{3}{4}$                  | 31 $\frac{1}{2}$          | 33 $\frac{3}{4}$                 | 1.75                   | 2.25         | 3                               | 4                 | 43 $\frac{3}{4}$   |
| 20.....         | 23 $\frac{3}{4}$                  | 31 $\frac{1}{2}$          | 4                                | 1.75                   | 2.25         | 3                               | 4                 | 43 $\frac{3}{4}$   |
| 21.....         | 23 $\frac{3}{4}$                  | 31 $\frac{1}{2}$          | 4                                | 1.75                   | 2.25         | 3                               | 4                 | 43 $\frac{3}{4}$   |
| 22.....         | 23 $\frac{3}{4}$                  | 31 $\frac{1}{2}$          | 4                                | 1.75                   | 2.25         | 3                               | 4                 | 4                  |
| 23.....         | 23 $\frac{3}{4}$                  | 31 $\frac{1}{2}$          | 41 $\frac{1}{4}$                 | 1.75                   | 2.25         | 31 $\frac{1}{4}$                | 41 $\frac{1}{4}$  | 41 $\frac{1}{2}$   |
| 24.....         | 23 $\frac{3}{4}$                  | 31 $\frac{1}{2}$          | 41 $\frac{1}{4}$                 | 1.75                   | 2.25         | 31 $\frac{1}{4}$                | 41 $\frac{1}{4}$  | 41 $\frac{1}{2}$   |
| 25.....         | 23 $\frac{3}{4}$                  | 31 $\frac{1}{2}$          | 41 $\frac{1}{4}$                 | 1.75                   | 2.25         | 31 $\frac{1}{4}$                | 41 $\frac{1}{4}$  | 41 $\frac{1}{2}$   |
| 26.....         | 23 $\frac{3}{4}$                  | 31 $\frac{1}{2}$          | 41 $\frac{1}{4}$                 | 1.75                   | 2.25         | 31 $\frac{1}{4}$                | 41 $\frac{1}{4}$  | 41 $\frac{1}{2}$   |
| 27.....         | 23 $\frac{3}{4}$                  | 31 $\frac{1}{2}$          | 41 $\frac{1}{4}$                 | 1.75                   | 2.25         | 31 $\frac{1}{4}$                | 41 $\frac{1}{4}$  | 41 $\frac{1}{2}$   |
| 28.....         | 23 $\frac{3}{4}$                  | 31 $\frac{1}{2}$          | 41 $\frac{1}{4}$                 | 1.75                   | 2.25         | 31 $\frac{1}{4}$                | 41 $\frac{1}{4}$  | 41 $\frac{1}{2}$   |
| 29.....         | 23 $\frac{3}{4}$                  | 31 $\frac{1}{2}$          | 41 $\frac{1}{4}$                 | 1.75                   | 2.25         | 31 $\frac{1}{4}$                | 41 $\frac{1}{4}$  | 41 $\frac{1}{2}$   |
| 30.....         | 23 $\frac{3}{4}$                  | 31 $\frac{1}{2}$          | 41 $\frac{1}{4}$                 | 1.75                   | 2.25         | 31 $\frac{1}{4}$                | 41 $\frac{1}{4}$  | 41 $\frac{1}{2}$   |

## MERCHANTS AND MINERS' TRANSPORTATION COMPANY.

[Rates in effect December 1, 1891.]

| Articles.                                                | Between Baltimore and— |            |          |              |
|----------------------------------------------------------|------------------------|------------|----------|--------------|
|                                                          | Boston.                | Savan-nah. | Norfolk. | Provi-dence. |
| Apples.....per barrel..                                  | \$0.25                 | \$0.25     | \$0.20   | \$0.25       |
| Bacon and hams.....per 100 pounds..                      | .15                    | .15        | .10      | .15          |
| Beef.....per tierce..                                    | .60                    | .60        | .30      | .60          |
| Butter.....per 100 pounds..                              | .25                    | .25        | .20      | .25          |
| Cheese.....do.....                                       | .25                    | .25        | .20      | .25          |
| Cotton, compressed.....per bale..                        | 1.00                   | 1.00       | .50      | 1.00         |
| Fertilizers.....per 100 pounds..                         | .15                    | .15        | .10      | .15          |
| Flour.....per barrel..                                   | .25                    | .25        | .12      | .25          |
| Hogs, dressed.....per 100 pounds..                       | .20                    | .20        | .20      | .20          |
| Lard.....do.....                                         | .15                    | .15        | .10      | .15          |
| Lumber.....do.....                                       | .15                    | .15        | .15      | .15          |
| Pork.....per barrel..                                    | .60                    | .60        | .30      | .60          |
| Potatoes.....do.....                                     | .35                    | .25        | .20      | .35          |
| Salt.....per 100 pounds..                                | .15                    | .15        | .10      | .15          |
| Tobacco, unmanufactured, in hogsheads.....per hogshead.. | 2.50                   | 2.50       | .50      | 2.50         |
| Wool.....per 100 pounds..                                | .30                    | .30        | .30      | .30          |
| Wheat, corn, rye, oats, and barley.....do.....           | .12                    | .12        | .10      | .12          |
| Cattle, O. R., released.....each..                       | 15.00                  | 15.00      | 3.00     | 15.00        |
| Horses, O. R., released.....do.....                      | 25.00                  | 25.00      | 5.00     | 25.00        |
| Sheep, O. R., released.....do.....                       | 3.00                   | 3.00       | 3.00     | 3.00         |
| Hogs, O. R., released.....do.....                        | 3.00                   | 3.00       | 3.00     | 3.00         |











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